PARTNER EDUCATION CATALOG

Including EMC Proven Professional Certification

January 2011

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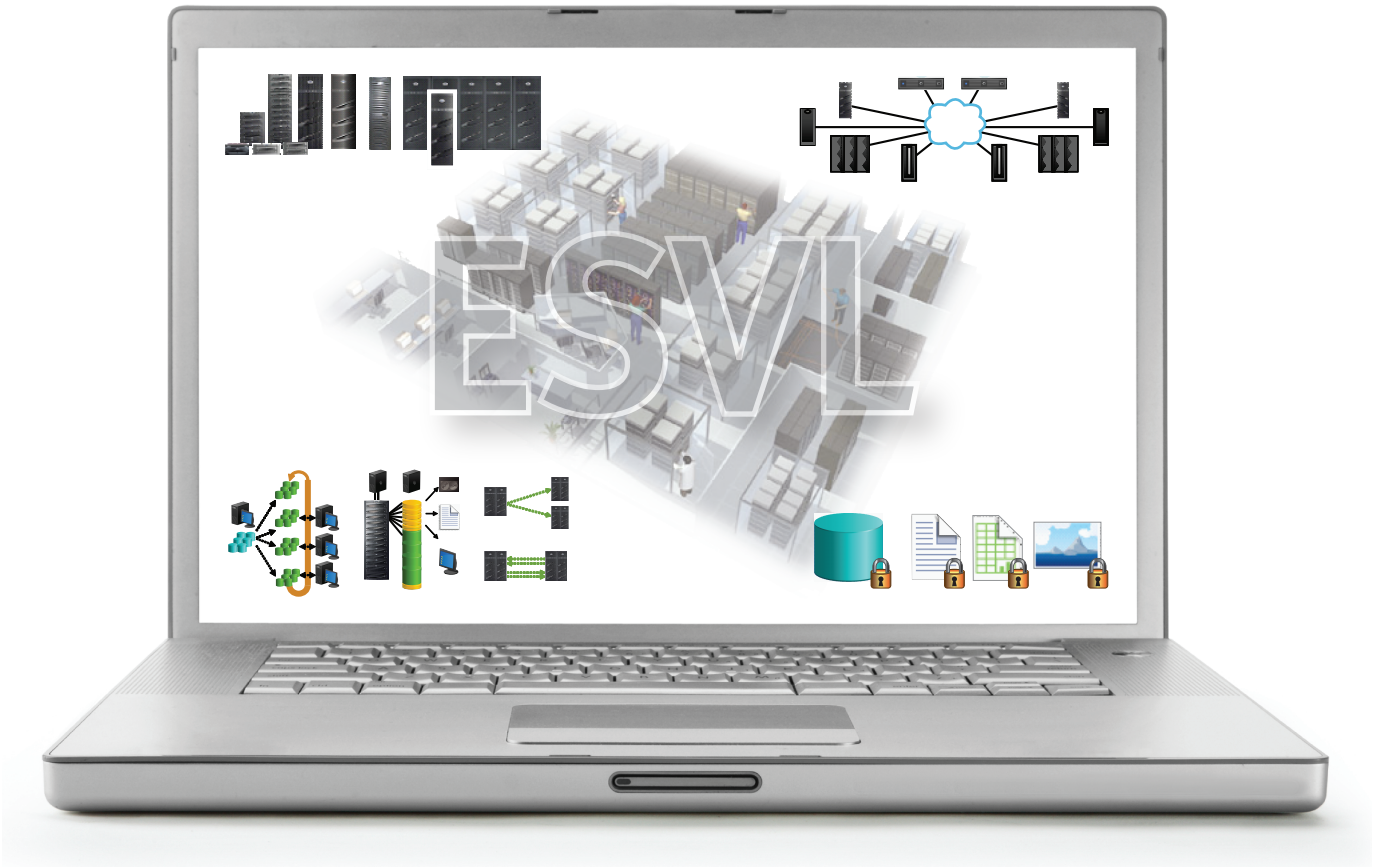

Leverage hands-on labs ... outside the classroom!

Trained and certified EMC Partners can leverage our EMC Education Services Virtual Lab (ESVL). You will benefit from hands-on lab experiences in a safe non-production environment similar to the labs provided in our award-winning instructor-led training.

- Review and validate planned configuration procedures
- Refresh and enhance your configuration skills
- Increase your efficiency

Choose from a wide selection of remote lab configurations today!
http://education.EMC.com (Partner login required)

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Table of Contents

EMC Partner Programs 4
EMC Proven Professional Accreditation 5
EMC Proven Professional Certification 6
Getting Proven 8

Learning Paths

Information Storage and Management **10**

EMC Proven Professional Data Center Architect (EMCDCA)
- Storage Networking 11
- Information Availibility 12
- Information Storage Security 13
- Storage Service Management 14

EMC Proven Professional Cloud Architect (EMCCA)
- Virtualized Infrastructure 15

EMC Proven Professional Storage Administrator (EMCSA)
- Backup and Recovery - NetWorker 16
- Ionix for Storage Resource Management (ControlCenter) 18
- Storage Area Network (SAN) (Connectrix) 20
- Network-Attached Storage—(NAS) (Celerra) 22
- Symmetrix Solutions (DMX, V-max) 24
- CLARiiON Solutions (SnapView, MirrorView) 26

EMC Proven Professional Technology Architect (EMCTA)
- Backup and Recovery Solutions (NetWorker, Avamar, DPA, and EMC Disk Library) 28
- Network-Attached Storage (NAS) (Celerra) 30
- Content Addressed Storage (CAS) (Centera) 32
- Symmetrix Solutions (DMX, V-max) 33
- CLARiiON Solutions (SnapView, MirrorView) 35
- EMC Storage and Information Infrastructure 37
- EMC Commercial Storage and Information Infrastructure 38

EMC Proven Professional Platform Engineer (EMCPE) (Velocity Service Partners Only)
- Celerra 39
- EMC Centera 40
- Symmetrix 41
- CLARiiON 42

EMC Proven Professional Implementation Engineer (EMCIE) (Velocity Service Partners Only)
- Backup and Recovery - Avamar 43
- Backup and Recovery - NetWorker 44
- Network-Attached Storage (NAS) (Celerra) 46
- Symmetrix Solutions (DMX, V-max) 48
- Content Addressed Storage (CAS) (Centera) 50
- CLARiiON Solutions (SnapView, MirrorView) 51

Product/Technology Specific
- DiskXtender for Windows 53
- EMC Disk Library and B2D 54
- EMC SourceOne 55
- EMC Technology Foundations 56
- Ionix for IT Operations Intelligence (Network Management (Smarts)) 57
- RecoverPoint Data Replication and Recovery 58
- Symmetrix Mainframe Business Continuity (TF/SRDF) 59

Other
- Celerra Unified Storage QuickStart 60
- CLARiiON AX4-5 and CX4-10c, 20c, 20f QuickStart 61
- Data Domain Installation, Implementation and Administration QuickStart 62
- Data Protection Advisor (DPA) 63
- EmailXtender and EmailXaminer 64
- EMC File Management Appliance 65
- Ionix for Network Configuration Manager (formerly Voyence) 66
- RSA enVision and Data Loss Prevention 67-68
- VMware 69

EMC Proven Professional Content Management 70-74

Purchase Options and Delivery Modes 75

Contact Us

Online: http://education.EMC.com
E-mail: EdServices@EMC.com
Phone: 1-888-EMC-TRNG

International:

APEducation@EMC.com
+61 2 9922 7888 (ANZ)
+65 6333 6200 (South Asia)

EMEA_Education@EMC.com
+44 208 758 6080 (UK)
+49 6196 4728 666 (Germany)

GCEducation@EMC.com
+86 10 8438 6593 (Greater China)

India_Education@emc.com
+91-80-6737-5064 (India)

Japan_Education@EMC.com
+81 44 520 9830 (Japan)

Korea_Education@EMC.com
+82 22125 7750 (Korea)

EMC Partner Programs

EMC created one of the industry's strongest groups of business partners to ensure that our customers achieve the most value from their information infrastructure. EMC Education Services provides programs to help you deliver valuable solutions and services to your customers.

EMC's Velocity² Partner Program serves a select worldwide network of integrators, consultants, hardware and software vendors, resellers, distributors, and application service providers. EMC Education Services provides training, accreditation, and certification to enable you to succeed within your preferred business models.

There are different types of partners within the Velocity² Partner Program.

- **Velocity Service Partners** help partners assess, plan, design, build, and manage EMC's information infrastructure solutions to meet their precise business needs. Acceptance into the Velocity Service program is based, in part, on satisfying rigorous criteria for certified resources, services delivery quality, customer satisfaction metrics, and pre-existing services infrastructure.
- **Authorized Velocity² Distributors** market and sell EMC products and services to their own channel of resellers, providing front-line sales, marketing, training, and support.
- **EMC distributors** may focus on broad line, specialty, and technical or value-add EMC solutions.

EMC²
VELOCITY² PARTNER PROGRAM

The EMC Proven Professional program is a complete readiness solution for EMC employees and partners. Its certification offerings develop and validate expertise to plan, deploy, manage, and fully leveraging EMC solutions.

EMC Velocity Partner Education

EMC Velocity Partner Education is provided for partner sales people and pre-sales technical resources. The program is designed to accelerate a partner's learning and development cycles for solving customer information infrastructure challenges and delivering value within a consultative approach.

Partner Certification

EMC Proven Professional Certification is the #1 certification program in the information and storage industry, providing formal validation and recognition to elite storage professionals worldwide. With the industry's widest coverage of information storage and management specializations, partners build knowledge, expertise, and credibility in the technology segment of their business.

EMC Velocity Partner Education

EMC Velocity Education is a world-class assessment-based training program that develops and validates the skills of EMC partners. Training is provided for partner sales people and pre-sales technical resources. This program is designed to accelerate a partner's learning and development cycles for solving customer information infrastructure challenges and delivering value within a consultative approach.

GENERAL PROGRAM EXPECTATIONS

In order to complete your development, you will need to consume the courseware and pass the associated tests within your selected development. Development paths are based on your role (Sales or Technical), and by your Velocity Specialty or Tier.

2011 PARTNER SALES DEVELOPMENT – AFFILIATE TIER

AFFILIATE SALES DEVELOPMENT

The Sales Affiliate Development is designed specifically for our Affiliate partners and their market space. This four module eLearning development covers EMC Messaging, Business Drivers, Product Introduction, and Services for 2 plus hours of development.

Learn more at: Home › Training › Velocity Affiliate Enablement

2011 PARTNER SALES DEVELOPMENT – AFFILIATE ELITE, PREMIERE, & SIGNATURE TIERS

SALES ACCREDITATION (CONSOLIDATE AND BACKUP & RECOVERY)

For students that were not Sales Accredited in 2010, please select the Consolidate and Backup & Recovery development. This track consists of three (3) tests and approximately 8 hours of investment in order to complete the development.

SALES ACCREDITATION MAINTENCE (CONSOLIDATE AND BACKUP & RECOVERY)

For students that have earned a 2010 Sales Accreditation, please select the Consolidate and Backup & Recovery Maintenance development. This track consists of two (2) tests and approximately 3 hours of investment in order to complete the development.

SALES ACCREDITATION (GOVERNANCE & ARCHIVE)

For students that are content management partners, please select the Governance & Archive development. This Sales track consists of four (4) tests and approximately 8 to 12 hours of investment in order to complete the development.

To Access the Sales Accreditation Home page, please visit Home › Training › Sales Accreditation on Powerlink.

ADVANCED SALES ACCREDITATION

Once you have earned a Sales Accreditation, you now have the opportunity to participate in the Advanced Sales Accreditation program.

Learn more at: Home › Training › Tools, Launches, & Live Training › Live Training Resources › Advanced Sales Accreditation on Powerlink

2011 PARTNER TECHNICAL DEVELOPMENT– AFFILIATE TIER

AFFILIATE SALES DEVELOPMENT

The SE Affiliate Development is designed specifically for our Affiliate partners and their market space. This four module eLearning development covers EMC Messaging, Business Drivers, Product Introduction, and Services for 3 plus hours of development.

2011 PARTNER TECHNICAL DEVELOPMENT– AFFILIATE ELITE, PREMIERE, & SIGNATURE TIERS

VELOCITY SYSTEMS ENGINEER (CONSOLIDATE or BACKUP & RECOVERY)

Replacing the 2010 SE Accreditation program for Consolidation, Backup, and Archive tracks, the NEW Velocity Systems Engineer development provides a comprehensive technical review of EMC solutions.

New for 2011 is the Product & Technology module. This module is the core of the development for a Velocity Systems Engineer, and is a combination of online development (eLearning) and a proctored test.

SE ACCREDITATION (GOVERNANCE & ARCHIVE)

For students that are content management partners, please select the Governance & Archive development.
Learn more at: Home › Training › Velocity SE Development on Powerlink.

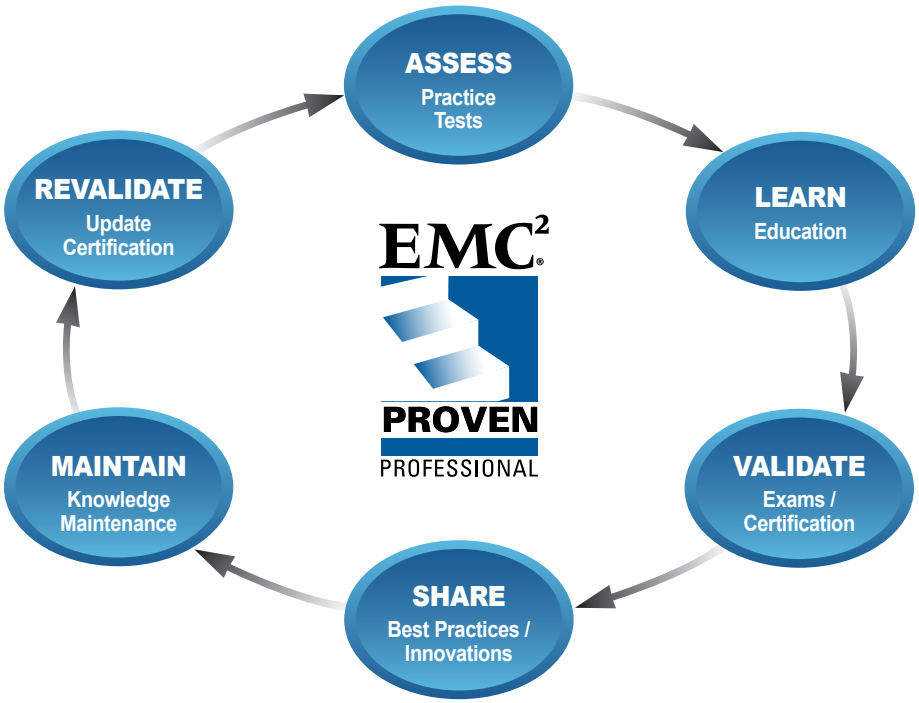
EMC Proven Professional Certification

EMC Proven™ Professional is the #1 certification program in the information storage and management industry. It offers a role-based series of courses and exams that cover the full range of EMC's hardware, software, and solutions. In addition to three levels of technical learning and certification, EMC Proven Professional also includes 'open' courses such as Information Storage and Management.

Being Proven means investing in yourself and formally validating your knowledge, skills, and expertise by the industry's most comprehensive learning and certification program. Join a community of dedicated professionals, share exclusive benefits, get Proven.

For up-to-date information on the EMC Proven Professional certification program, please visit http://education.EMC.com/Certification.

EMC Proven Professional Learning Framework



A consistent, measurable means to build and maintain the technical knowledge and skills of information storage and management professionals.

Trained and certified professionals are essential to the success of IT infrastructure management organizations

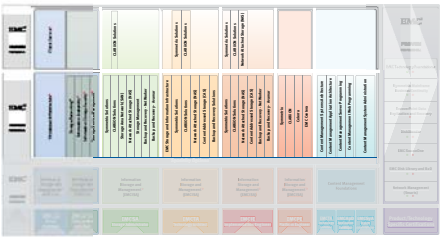
EMC, in conjunction with IDC, fielded a survey to a population of individuals who have achieved one or more EMC Proven Professional certifications. 3,200+ respondents were recorded. Survey respondents confirmed the applicability and value of their broadened skills and expertise. Read how IDC analyzes the career impact of IT professionals who are certified EMC Proven Professionals.

Download the IDC white paper: The Proven Professional Certification - Proving Certification Can Profit http://education.EMC.com/ProvenImpact

EMC Proven Professional Certification Framework

Broad and relevant technology coverage – ensures wider application of your knowledge

- Develop information storage knowledge and skills that will enable you to respond to the challenges of evolving IT infrastructures. Learn information storage and management concepts and principles that can be applied in many IT scenarios.
- Evaluate and recommend information storage solutions based on broad technology considerations.
- Adapt to changing requirements in evolving IT infrastructures.



Role-based specialization – develops expertise based on best practices

- The complexity of evolving IT infrastructures drives a greater need for IT professionals with specialized information storage knowledge and skills. Leverage our modularized curriculum to suit your individual learning needs based on your job role.
- Better understand EMC products, software, and solutions.
- Use more features and functions, maximizing investment in EMC products and technologies.

EMC Proven™ Professional Certification Framework

Expert

IT as a Service*

CLARiiON Solutions

Symmetrix Solutions | CLARiiON Solutions

Symmetrix Solutions | CLARiiON Solutions | Network Attached Storage (NAS)

Specialist

Virtualized Infrastructure* | Storage Networking* | Information Availability* | Information Storage Security* | Storage Service Management*

Symmetrix Solutions | CLARiiON Solutions | Storage Area Network (SAN) | Network Attached Storage (NAS) | Storage Management | Backup and Recovery - NetWorker | Backup and Recovery - Avamar

EMC Storage and Information Infrastructure | Symmetrix Solutions | CLARiiON Solutions | Network Attached Storage (NAS) | Content Addressed Storage (CAS) | Backup and Recovery Solutions

Symmetrix Solutions | CLARiiON Solutions | Network Attached Storage (NAS) | Content Addressed Storage (CAS) | Backup and Recovery - NetWorker | Backup and Recovery - Avamar

Symmetrix | CLARiiON | Celerra | EMC Centera

Content Management Systems Architecture | Content Management Application Architecture | Content Management Server Programming | Content Management Web Programming | Content Management System Administration

Specialty Options

Associate

Information Storage and Management* (EMCISA) | Information Storage and Management* (EMCISA)

Information Storage and Management* (EMCISA)

Information Storage and Management* (EMCISA)

Information Storage and Management* (EMCISA)

Information Storage and Management* (EMCISA)

Content Management Foundations

Levels

EMCCA Cloud Architect | EMCDCA Data Center Architect

EMCSA Storage Administrator

EMCTA Technology Architect

EMCIE Implementation Engineer

EMCPE Platform Engineer

EMCTA Technology Architect | EMCApD Application Developer | EMCSyA System Administrator

Certification Tracks (Job Functions)

EMC Technology Foundations

Symmetrix Mainframe Business Continuity

RecoverPoint Data Replication and Recovery

DiskXtender

EMC SourceOne

EMC Disk Library and B2D

Network Management (Smarts)

Product/Technology Specific Certifications

● Customers ● Partners

* Unique 'Open' Courses - Content focused on technology concepts, principles, and case studies that can be applied in all IT environments.

Getting Proven

1. Find your track.

EMC partner programs have widely adopted EMC Proven Professional certification as part of the partner compliance requirements. Tracks are based on professional role, required knowledge, and are aligned with the type of partnership.

For any partner resources looking to build a strong foundation in Storage Technologies:

Storage Technologist Track—offers a unique "open" curriculum focused on the concepts and principles of storage technology, using EMC products and case studies as examples. It builds a strong understanding of all storage technology segments, including storage subsystems, SAN, NAS, CAS, IP-SAN, business continuity, backup, recovery, and storage management. The first course in this "open" curriculum—Information Storage and Management—provides technical knowledge essential for all IT professionals working with storage.

For Velocity Service Partners (Technical):

Implementation Engineer Track—for Professional Services resources. This specialization curriculum challenges partners to experience and validate required configuration and implementation knowledge and skills. Certification provides credentials to solidify partners' trust in professionals coming in contact with their information infrastructure investments.

Platform Engineer Track—for Customer Services and Support resources. Specialization curriculum challenges partners to experience and validate their required maintenance and troubleshooting knowledge and skills. Certification provides credentials to solidify partners' trust in professionals coming in contact with their information infrastructure investments.

Product/Technology Specific certification Track—offers EMC technology-specific curricula ranging from EMC Technology Foundations to RecoverPoint. Additional specialties are available for partners with specific EMC technology solutions.

For EMC Velocity² Partners (Technical Presales):

Technology Architect Track—for technical pre-sales resources. The specialization curriculum challenges partners to learn and validate their technology expertise and solution design skills. The Solutions Design curriculum challenges partners to gather, analyze, design, and propose a solution that fully leverages EMC solutions.

Product/Technology Specific Certification Track—offers EMC technology-specific curricula ranging from EMC Technology Foundations to RecoverPoint. Additional specializations are available for partners with specific EMC technology solutions.

For technical resources providing storage management services:

Storage Administrator Track —offers six EMC technology-specific curricula ranging from Backup and Recovery to CLARiiON Solutions. Specialization within the track makes it ideal for partners to build a team of storage professionals who help deploy and manage partners' information infrastructures.

Product/Technology Specific Certification Track—offers EMC technology-specific curricula ranging from EMC Technology Foundations to RecoverPoint. Additional specializations are available for partners with specific EMC technology solutions.

For technical resources developing content management applications:

Application Developer Track, System Administrator Track, and Technology Architect specialty.

2. Choose your Specialty (Learning Path).

EMC Proven Professional offers a variety of specialties within your selected role(s). Choose the Learning Path that fits your business and educational needs. More and more partners are achieving certifications in multiple specialities within the same role, or multiple roles in the same specialty.

3. Acquire Training.

Certification-aligned learning paths are conveniently pre-packaged as Partner ValuePaks so that you can purchase the complete curriculum at partner discount. Partner ValuePaks remove the guesswork from planning and purchasing certification training.

Partner Subscriptions are another popular option for those seeking multiple certifications across Associate, Specialist, and Expert Levels, and across multiple roles and specialties. Partner Subscriptions can also be used for VMware courses required to achieve VMware Certified Professional (VCP).

Leverage certification-aligned 'open' or EMC Technology Specific Learning Paths http://education.EMC.com/Training

4. Validate your Knowledge and Skills.

We offer free practice tests aligned to the certification exams, leverage FREE online assessment tests http://education.EMC.com/Exams

Our proctored exams are administered at VUE testing centers world wide. Your certification credentials are safely managed in our EMC Proven Professional CertTracker.
Leverage your closest PEARSON VUE testing center http://www.pearsonvue.com/emc

5. Connect with Us.

Collaborate on industry challenges, join exam building, influence content, discuss programs, and get early announcements. Share ideas and expertise. Find answers from EMC Proven Professional program management team, subject matter experts, EMC Education Services managers, and other EMC Proven Professionals.

Become a fan:
EMC Proven Professional

http://education.EMC.com/ProvenCommunity

Follow us:
@EMCEducation, @EMCProven

6. Enjoy Exclusive Benefits.

Once you've achieved an EMC Proven Professional certification, you join a community of IT professionals who will lead us into the next generation of information and storage management. If that's not enough incentive, you'll also be eligible for exclusive benefits.

Knowledge Sharing—Knowledge Sharing is a platform for certified Proven Professionals to share expertise, unique deployments, best practices, or any relevant topic of interest. Written exclusively by EMC Proven Professionals, anyone can learn from these Knowledge Sharing articles and webcasts.

Knowledge Maintenance—Knowledge Maintenance, an exclusive benefit for certified Specialists and Experts, provides proactive notification and no-cost knowledge update through e-Learning titles to sustain the value of your certification.

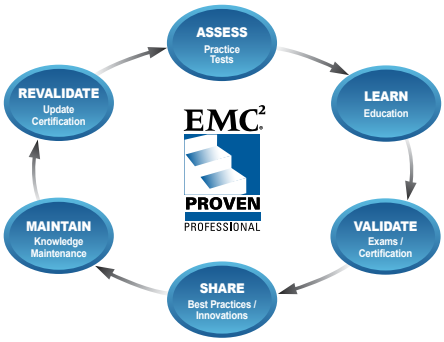
EMC Proven Professional Logo—use on business cards and e-mail signatures.

Credit towards Masters degree— jump start your graduate school goals towards a Master of Information Technology Degree

GI Bill Reimbursement— receive reimbursement for EMC Proven Professional certification exam fees.

EMC Proven Professional Program updates

We periodically update our programs and curricula to reflect the changes in the IT storage industry to better accommodate the needs of our employees, customers, and partners. For the latest program and course updates please visit the education portal at http://education.EMC.com



Becoming a certified EMC Proven Professional

Leveraging the EMC Proven Professional Learning Framework

1. ASSESS your level of expertise
Leverage FREE online assessment tests http://education.EMC.com/Exams

2. LEARN the technology subject areas in need of further development
Leverage certification-aligned 'open' or EMC Technology Specific Learning Paths http://education.EMC.com/Training

3. VALIDATE your expertise by taking and passing a proctored exam
Leverage your closest PEARSON VUE testing center http://www.pearsonvue.com/emc

Information Storage and Management

EMC² PROVEN PROFESSIONAL

Benefits Storage Architects, Administrators, or Managers; CIOs or Project Managers; or recent additions to storage and information management teams. You will learn to make informed decisions across multiple technologies involving SAN, NAS, CAS, IP-SAN, Backup and Recovery, Business Continuity, Security, and Virtualization. Prepare for your Associate-Level Certification.

ValuePaks

Courses	Instructor-Led Training	e-Learning	Course Objectives
Information Storage and Management Exam (E20-001)			
Storage System		4 Hours	• Describe the challenges in information storage and management • Describe the core elements in a data center infrastructure • List and describe the components of storage system environment • Describe the RAID and its various levels • Describe features and implementation of intelligent storage systems
Storage Networking Technologies and Virtualization		7 Hours	Describe the components, connectivity, and management of: o Direct Attached Storage (DAS) o FC and IP Storage Area Networks (SAN) o Network Attached Storage (NAS) o Content Addressed Storage (CAS) • Compare the benefits and challenges of each of the storage models • Describe storage virtualization technologies
Business Continuity		5 Hours	• Discuss the concept of information availability and its measurement • Describe the backup/recovery purposes and considerations • Discuss architecture and different backup/Recovery topologies • Describe local replication technologies and their operation • Describe remote replication technologies and their operation
Storage Security and Management		4 Hours	• Define information security • List the critical security attributes for information systems • Define storage security domains • List and analyze the common threats in each domain • Identify key parameters and components to monitor in a storage infrastructure • List key management activities with examples • Define storage management standards and initiative

Purchase Options

Information Storage and Management eValuePak*
CE-eVALPAKSTF $800

Information Storage and Management ILT
CE-VALPAKSTF $2,700
*Contains one Instructor-led,

*Partner ValuePaks typically contain the Information Storage and Management e-Learning modules, eliminating the need to purchase the package separately.

Storage Networking
Data Center Architect

Benefits any storage professional who plans, designs, deploys, and manages an information storage infrastructure. You will learn to capture and analyze business requirements, design solutions, and implement plans in a process-oriented workshop using real-world case studies.

Courses	Video Instructor-Led Learning	Instructor-Led Training	e-Learning	Course Objectives	Levels
Storage Networking Design Specialist Exam for Data Center Architects (E20-016)					SPECIALIST
Storage Networking Design Storage Networking Design course covers a range of storage networking technologies, processes, and best practices for planning, architecting, and deploying storage networking solutions—including within a virtualized environment. This course builds on the technology concepts and principles learned in the Information Storage and Management (ISM) course (prerequisite) and enables participants to apply their knowledge to real-world scenarios. Lectures and workshop style case studies provide a thorough exposure to Storage Networking requirement analysis, business value justification, and technology design considerations. It also provides an overview on processes and practices for Storage Networking project implementation and testing.		5 Days		**Section 1: Analysis and Planning for Architecting Storage Networking Solution** • Requirement and business value analysis • Gathering requirements by classifying applications • Case studies on business value analysis **Section 2: Storage Network Design Considerations** • Fibre Channel Storage Area Network • Network Attached Storage • Hybrid (iSCSI, FCIP, FCoE) Storage Networking technologies • Design for storage virtualization and Cloud Computing • Case studies on designing FC SAN and NAS solutions **Section 3: Host and Storage System Design Considerations** • Design considerations and best practices for Host system • Design considerations and best practices for Storage system • Storage design for Database (Oracle) and Email (MS Exchange 2010) applications • Case studies on designing storage solution for MS Exchange 2010 environment **Section 4: Implementation Planning and Test Procedure for a Storage Networking Project** • Analysis and Planning for Storage Networking Project Implementation •Test Procedure for a Storage Networking Project	
Information Storage and Management Exam (E20-001)					ASSOCIATE
Information Storage and Management (5 days) OR (20 hours) (4 e-Learning modules) Information Storage and Management (ISM) is the only course of its kind to fill the knowledge gap in understanding varied components of modern information storage infrastructure. It provides a strong understanding of information storage technologies which prepares you to learn advanced concepts, technologies and also enable you to make more informed decisions in an increasingly complex IT environment. You will learn about the architectures, features, and benefits of Intelligent Storage Systems; storage networking technologies such as FC-SAN, NAS, and IP-SAN; long-term archiving solution – CAS; business continuity solutions such as backup and replication, the increasingly critical area of information security, and the emerging field of storage virtualization including storage resource management. The technologies described in the course are illustrated and reinforced with EMC product examples. Realistic case studies enable the participant to design the most appropriate solution for given sets of criteria.					

Purchase Options

EMCDCA Storage Networking Design and Mgmt*
CE-EMCDCASNDM $5,000
*Contains one Instructor-led, one Video-ILT

Information Storage and Management eValuePak
CE-eVALPAKSTF $800

Information Storage and Management ValuePak
CE-VALPAKSTF $2,700

For details on purchase options see page 77.

Information Availability
Data Center Architect

EMC² PROVEN PROFESSIONAL

Benefits storage architects, administrators, or managers; CIOs or project managers; or recent additions to information and storage management teams. You will learn to make informed decisions across multiple technologies involving SAN, NAS, CAS, IP-SAN, Backup and Recovery, Business Continuity, Security, and Virtualization.

ValuePaks	Courses	Video Instructor-Led Learning	Instructor-Led Training	e-Learning	Course Objectives	Levels
	Information Availability Design Specialist Exam for Data Center Architects (E20-017)					SPECIALIST
	Information Availability Design Information Availability Design course provides a comprehensive learning experience on all aspects of planning, designing, and deploying Information Availability solutions. In addition to covering business continuity options such as Backup, Local and Remote replication, this course also covers compliance requirements and design of data archiving solutions to meet those requirements. This course builds on the technology concepts and principles learned in the Information Storage and Management course (prerequisite) and enables participants to apply their knowledge to real-world scenarios. Lectures and workshop style case studies provide a thorough exposure to the technology components, design considerations, and best practices on various aspects of Information Availability.		5 Days		**Section 1: Analysis and Establishing of Information Availability** • Introduction to Information Availability and business value analysis • Establishing Information Availability • Case study on data classification and Information Availability metrics **Section 2: Designing Backup/Recovery Solutions** • Backup technology overview • Backup design considerations • Backup in a virtualized environment • Backup management tools • Case study on designing and deploying backup and recovery solutions **Section 3: Designing Replication Solution** • Planning for replication • Local replication solution design • Remote replication solution design • Advanced remote replication technologies • Replication in NAS environment • Replication of virtual machines • Case studies on designing and deploying replication solutions **Section 4: Designing Data Archiving Solutions** • Data archiving technologies and compliance • Archiving design considerations	
	Information Storage and Management Exam (E20-001)					ASSOCIATE
	Information Storage and Management (5 days) OR (20 hours) (4 e-Learning modules) Information Storage and Management (ISM) is the only course of its kind to fill the knowledge gap in understanding varied components of modern information storage infrastructure. It provides a strong understanding of information storage technologies which prepares you to learn advanced concepts, technologies and also enable you to make more informed decisions in an increasingly complex IT environment. You will learn about the architectures, features, and benefits of Intelligent Storage Systems; storage networking technologies such as FC-SAN, NAS, and IP-SAN; long-term archiving solution – CAS; business continuity solutions such as backup and replication, the increasingly critical area of information security, and the emerging field of storage virtualization including storage resource management. The technologies described in the course are illustrated and reinforced with EMC product examples. Realistic case studies enable the participant to design the most appropriate solution for given sets of criteria.					

Purchase Options

EMCDCA Information Availability Design and Mgmt*
CE-EMCDCAIADM $5,000
*Contains one Instructor-led

Information Storage and Management eValuePak
CE-eVALPAKSTF $800

Information Storage and Management ValuePak
CE-VALPAKSTF $2,700

For details on purchase options see page 77.

Information Storage Security
Data Center Architect

EMC² PROVEN PROFESSIONAL

This curriculum focuses on the intersection of information security, data storage, and networking to enable you to holistically apply security best practices in the context of business strategy, regulatory compliance, organizational structure and security policy, people and skills, processes, and technology. It builds your knowledge and develops your skills to successfully design, implement, and monitor data storage security solutions to meet business requirements.

ValuePaks	Courses	Online ILT	Instructor-Led Training	e-Learning	Course Objectives	Levels
	Information Storage Security Design and Management Specialist Exam for Data Center Architects (E20-021) (Coming 2011)					SPECIALIST
	Information Storage Security Design This course builds knowledge and skills required to successfully architect, design, implement, monitor, and maintain information storage security solutions to meet the needs of a business. It details a comprehensive, holistic, process-based approach that integrates business and technical factors to consider in the design of information storage security solutions to enhance their acceptability and business value. The course encompasses business strategy and its key criteria and perspectives, regulatory compliance, technical criteria, best practices, organizational structure, processes, people skills, and security posture. Included is a discussion of information security challenges and solutions in virtualized and cloud environments. Workshop style case studies at each design stage provide participants with an opportunity to apply their learning to real world situations.	5 Days	5 Days		• Identify various regulations, legislation and standards that affect a customer's information infrastructure and the customer's security issues • Explain the role of an enterprise security policy, and its critical components • Describe the importance of a security development lifecycle on the creation of secure products and the effect on operational security • Explain how Security Configuration guides can be used to understand an organization's security problems • Articulate the critical design decisions that support a secure storage environment • List various implementation strategies for securely integrating storage products into a storage ecosystem. • Explain the role of information storage security within virtualized environments • Articulate how to maximize information storage security with Cloud computing • Describe the role of secure logging in security auditing and SIEM • Define vulnerability management and the process of reporting weaknesses • List the key areas of data loss prevention • List common characteristics of digital forensics when working with storage subsystems	
	Assessing Information Security Risk Information-centric security, risk management and their application to the analytics of information assets, vulnerability assessments as a way to determine the most critical IT components to maintain confidentiality, integrity and availability of information			1.5 Hours	• Explain how information-centric security enhances the process of managing information through its lifecycle • List the elements of risk management • Describe the different classes of controls and how they work to mitigate risk • Explain the role of assessing vulnerabilities in determining risk	
	RSA Authentication, Authorization, and Key Management Authentication and Authorization, Concepts in Practice: RSA Authentication Products, Key Management, Concepts in Practice: RSA Key Manager			1.5 Hours	• List business drivers for Identity and Access Management (I&AM) • Explain the differences between authorization and authentication • Explain the benefits of federated identity • Describe the problems associated with incorporating encryption into an enterprise	
	Network Security and the ESRS Gateway ESRS installation, connecting to EMC, EMC Backend Environment, EMC Call Home Process flow, EMC Remote Access Process, Symmetrix Service Credentials			1 Hour	• Explain how the ESRS gateway utilizes network security mechanisms like SSL and digital certificates to secure remote access communications • Describe the network protocols and services used to implement the gateway solution • Describe the use of Service Credentials for the Symmetrix storage array	
	Security Overview for EMC Products Securing the Infrastructure: Instantiating the Policy, Security Feature/Functions by Product Category (tiered storage, switch fabric, NAS, BURA, replication, virtualization, and storage resource management)			3 Hours	• Articulate the major security functional areas covered in the EMC product security policy • Describe the security feature/functions of EMC's major product lines • Cite examples of how security features benefit a business	
	Information Security Solutions Design Concepts V4 Factors critical in the design process for secure SAN and NAS solutions; data to gather, analyze and interpret; best practices for design and validation of storage security solutions			1.5 Hours	• Describe technical data to gather concerning a business's information security needs and ways to interpret it • List ways to gather this information and tools that can be used to control and manage storage security • Articulate best practices for configuring and deploying storage security • Describe design pitfalls and overall risks associated with storage security • Identify how security events are incorporated into audit trails • Explain the role of data loss prevention in an overall security program	
	Cloud Computing Security Overview Introduction to cloud computing, Cloud Infrastructure, Security concerns and challenges of cloud			1 Hour	• Define and understand cloud computing, its types, benefits, and services • Discuss cloud infrastructure and its components • Describe security challenges and concerns with cloud computing	
	Information Storage and Management Exam (E20-001)					ASSOCIATE

Information Storage and Management (5 days) OR (20 hours) (4 e-Learning modules)

Information Storage and Management (ISM) is the only course of its kind to fill the knowledge gap in understanding varied components of modern information storage infrastructure. It provides a strong understanding of information storage technologies which prepares you to learn advanced concepts, technologies and also enable you to make more informed decisions in an increasingly complex IT environment. You will learn about the architectures, features, and benefits of Intelligent Storage Systems; storage networking technologies such as FC-SAN, NAS, and IP-SAN; long-term archiving solution – CAS; business continuity solutions such as backup and replication, the increasingly critical area of information security, and the emerging field of storage virtualization including storage resource management. The technologies described in the course are illustrated and reinforced with EMC product examples. Realistic case studies enable the participant to design the most appropriate solution for given sets of criteria.

Purchase Options

Information Storage Security Design and Management ValuePak*

CE-VALPAKDSS $5,000

*Contains one Instructor-led, one Video-ILT

For details on purchase options see page 77.

Storage Service Management
Data Center Architect

EMC² PROVEN PROFESSIONAL

Benefits IT professionals and managers who focus on managing storage within the ITIL best practices framework. Learn how to apply ITIL best practices to the management of storage as a service in your environment for processes within the Service Design, Service Transition, and Service Operation phases of ITIL. Gain perspective on challenges and opportunities when planning the tiering of storage services and understand key factors and best practices for design of secure information storage solutions.

ValuePaks	Courses	Video Instructor-Led Learning	Instructor-Led Training	e-Learning	Course Objectives	Levels
	Storage Services Management Specialist Exam for Data Center Architects (E20-022) (Coming 2011)					SPECIALIST
	Storage Service Management Design This course focuses on storage as a service, combining ITIL processes with EMC best practices to enable tight integration with the business and streamlined day-to-day operations to provide real benefits, reduced costs and risk when deploying solutions, and increased quality of services and customer satisfaction. It provides a roadmap to standardize the provisioning and delivery of storage services through a quality management approach that maximizes investment for classic, virtualized, and cloud environments. Lectures and workshop style case studies provide participants with opportunity to apply the learning to real world situations and gain insight into the development of processes, policies, and measurements to manage and support storage service delivery.		5 Days		• Describe the benefits of process-based storage service management to an IT organization, its customers, and the overall business • List Storage Service Management best practices for the major ITIL processes • Describe three perspectives of process responsibility (policies, activities, and measurements) that support Storage Service Management • Apply best practices when managing storage as a service, and demonstrate a clear understanding of how information flows across the three perspectives • Apply training and supporting collateral to contribute to the introduction or improvement of storage service levels within your IT organization whether traditional, virtualized or cloud environments.	
	ITIL V3 Foundations Certification Course Concepts, terms, definitions, objectives, relationships, and benefits within the core ITIL V3 Lifecycle framework; includes foundations exam	✓	3 Days		• Describe Service Management as a practice and the Service Lifecycle • Explain key principles and models as well as generic concepts • Describe ITIL V3 processes, roles, and functions • Describe ITIL V3 technology and architecture • Explain the ITIL V3 qualification scheme and certification program • Prepare for foundations exam with practice tests	
	Information Security Solutions Design Concepts V4 Factors critical in the design process for secure SAN and NAS solutions; data to gather, analyze and interpret; best practices for design and validation of storage security solutions			1.5 Hours	• Describe technical data to gather concerning a business's information security needs and ways to interpret it • List ways to gather this information and tools that can be used to control and manage storage security • Articulate best practices for configuring and deploying storage security • Describe design pitfalls and overall risks associated with storage security • Identify how security events are incorporated into audit trails • Explain the role of data loss prevention in an overall security program	
	Information Storage and Management Exam (E20-001)					ASSOCIATE
	Information Storage and Management (5 days) OR (20 hours) (4 e-Learning modules) Information Storage and Management (ISM) is the only course of its kind to fill the knowledge gap in understanding varied components of modern information storage infrastructure. It provides a strong understanding of information storage technologies which prepares you to learn advanced concepts, technologies and also enable you to make more informed decisions in an increasingly complex IT environment. You will learn about the architectures, features, and benefits of Intelligent Storage Systems; storage networking technologies such as FC-SAN, NAS, and IP-SAN; long-term archiving solution – CAS; business continuity solutions such as backup and replication, the increasingly critical area of information security, and the emerging field of storage virtualization including storage resource management. The technologies described in the course are illustrated and reinforced with EMC product examples. Realistic case studies enable the participant to design the most appropriate solution for given sets of criteria.					

Purchase Options

ITIL ValuePak*
CE-VALPAKITIL $5,000
*Contains one Instructor-led, one Video-ILT

Information Storage and Management eValuePak
CE-eVALPAKSTF $800

Information Storage and Management ValuePak
CE-VALPAKSTF $2,700

For details on purchase options see page 77.

Virtualized Infrastructure
Cloud Architect

EMC² PROVEN PROFESSIONAL

With multifold growth of digital information and emergence of technologies to manage the information growth, IT professionals are challenged to choose the right technologies, and designing optimal business infrastructures. Not only are IT professionals and Service Providers required to work with multiple technologies, they are also required to have the knowledge to design information infrastructures and enable cloud services environments.

Courses	Video Instructor-Led Learning	Instructor-Led Training	e-Learning	Course Objectives	Levels
Virtualized Infrastructure Specialist Exam for Cloud Architects (E20-018) (Coming 2011)					SPECIALIST
Virtualized Data Center and Cloud Infrastructure This course will cover in-depth details and considerations for planning, designing, and migrating to Virtualized Data Centers (VDC) and Cloud environments. This course will enable data center technology professionals to design VDC and Cloud infrastructures maintaining the most robust and elastic compute, network, and storage environments. The course will be premised on an 'open' architecture focusing on core components, principles, and technologies constituting both VDC and Cloud deployments utilizing best-of-breed EMC examples. This training is designed to be at the forefront of the changing IT landscape as traditional physical data centers evolve and morph into virtual entities and cloud environments. .		5 Days		• Describe and differentiate between virtualization and cloud concepts and capabilities including core VDC components and cloud elements • Describe the overall management strategy of a VDC or Cloud environment • Incorporate and list the critical aspects of cloud services as elements of cloud infrastructure planning • Describe how business process and service requirements will impact VDC and cloud planning and design • Identify key governance, audit and compliance considerations	
Information Storage and Management Exam (E20-001)					ASSOCIATE
Information Storage and Management (5 days) OR (20 hours) (4 e-Learning modules) Information Storage and Management (ISM) is the only course of its kind to fill the knowledge gap in understanding varied components of modern information storage infrastructure. It provides a strong understanding of information storage technologies which prepares you to learn advanced concepts, technologies and also enable you to make more informed decisions in an increasingly complex IT environment. You will learn about the architectures, features, and benefits of Intelligent Storage Systems; storage networking technologies such as FC-SAN, NAS, and IP-SAN; long-term archiving solution – CAS; business continuity solutions such as backup and replication, the increasingly critical area of information security, and the emerging field of storage virtualization including storage resource management. The technologies described in the course are illustrated and reinforced with EMC product examples. Realistic case studies enable the participant to design the most appropriate solution for given sets of criteria.					

Purchase Options

Virtualized Infrastructure ValuePak*
CE-VALPAKVI $5,000
*Contains Instructor-Led

Information Storage and Management eValuePak
CE-eVALPAKSTF $800

Information Storage and Management ValuePak
CE-VALPAKSTF $2,700

For details on purchase options see page 77.

Backup and Recovery - NetWorker 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 you 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 Specialist Exam For Storage Administrators (E20-597)					
Backup and Recovery ValuePak	**EMC NetWorker Administration for UNIX and Microsoft Windows** EMC NetWorker 7.x installation, configuration, maintenance, management, backup, recovery, autochanger configuration and management, save set cloning and staging, generate reports		5 Days		• Install and administer NetWorker and NetWorker Management Console • Perform and customize backups • Manage standalone devices, autochangers, databases, and media • Recover client data and a NetWorker server	SPECIALIST
Backup and Recovery ValuePak	**EMC NetWorker Integration with Backup-to-Disk Technologies** Overview, NetWorker and backup-to-disk, configuration			2 Hours	• List the requirements for a successful backup-to-disk integration • State the differences between NetWorker's "file type device" and "advance file type device" • Configure disk backup using EMC NetWorker	SPECIALIST
Backup and Recovery ValuePak	**EMC NetWorker Modules Overview** NetWorker modules (Database, E-mail, Enterprise Applications, SnapShot)			2 Hours	• Describe the EMC NetWorker Module solution and list the advantages • Explain NetWorker Module architecture and describe the functionality of each of the modules	SPECIALIST
Backup and Recovery ValuePak	**EMC NetWorker Foundations** NetWorker architecture, features, and functionality			2 Hours	• Describe the EMC NetWorker solution, its advantages, and the NetWorker hosts and their roles • Explain NetWorker backup and recovery processes and types	SPECIALIST
	Information Storage and Management Exam (E20-001)					
Information Storage and Management	**Information Storage and Management** (5 days) OR (20 hours) (4 e-Learning modules) Information Storage and Management (ISM) is the only course of its kind to fill the knowledge gap in understanding varied components of modern information storage infrastructure. It provides a strong understanding of information storage technologies which prepares you to learn advanced concepts, technologies and also enable you to make more informed decisions in an increasingly complex IT environment. You will learn about the architectures, features, and benefits of Intelligent Storage Systems; storage networking technologies such as FC-SAN, NAS, and IP-SAN; long-term archiving solution – CAS; business continuity solutions such as backup and replication, the increasingly critical area of information security, and the emerging field of storage virtualization including storage resource management. The technologies described in the course are illustrated and reinforced with EMC product examples. Realistic case studies enable the participant to design the most appropriate solution for given sets of criteria.					ASSOCIATE

Purchase Options

Information Storage and Management eValuePak
CE-eVALPAKSTF $800

Information Storage and Management ValuePak
CE-VALPAKSTF $2,700

Backup and Recovery ValuePak
CE-VALPAKBR $5,000
*Contains Instructor-Led

Backup and Recovery Video ValuePak*
CE-VIDVPKBR $3,000
*Contains Video-ILT

For details on purchase options see page 77.

Expert Level Knowledge

EMC AlphaStor Implementation, Configuration and Management
30 TU ILT 3 Days
18 TU VILT

This course explores EMC AlphaStor installation, configuration, and management. The course will provide a thorough overview of AlphaStor using EMC NetWorker (v7.3.x) as the backup application. The course also focuses on backup and recovery of an AlphaStor setup and discusses basic troubleshooting techniques. The course contains lectures, instructor demonstrations, and hands-on labs to reinforce the learning experience in both UNIX and Windows environments.

Data Protection Advisor Implementation and Management
30 TU Online ILT 3 Days

This Online ILT course covers implementation and management tasks related to the Data Protection Advisor product. Learners will be presented to the procedures of installing the different DPA components (server and collectors) on different platforms using different database types.

EMC NetWorker Module for Oracle Implementation and Configuration
20 TU Online ILT 2 Days

This Online ILT course focuses on how EMC NetWorker Module for Oracle works in conjunction with Oracle and EMC NetWorker to provide a comprehensive Oracle data storage management system. The concepts covered include installing, configuring and troubleshooting NetWorker Module for Oracle. The course contains lectures, hands-on lab exercises and review questions. Lab exercises will be performed on Solaris 10 operating system with Oracle10gR2 and EMC NetWorker v7.4.

EMC NetWorker Module for Microsoft Applications
20 TU Online ILT 2 Days

This introductory course provides an overview of features and functionality introduced with the EMC NetWorker Module for Microsoft Applications. Prior knowledge of EMC NetWorker software is a prerequisite as this course only focuses on the NetWorker Module for Microsoft Applications.

EMC NetWorker Module for Databases and Applications
30 TU Online ILT 3 Days

This introductory course provides an overview of features and functionality introduced with the EMC NetWorker Module for Databases and Applications release 1.0. Prior knowledge of EMC NetWorker software is a prerequisite as this course only focuses on the NetWorker Module for Databases and Applications.

Backup and Recovery Design using EMC NetWorker
30 TU ILT/Online ILT 3 Days
18 TU VILT

This three-day instructor-led course explores backup and recovery design considerations and challenges. The course details NetWorker's capabilities and discusses the steps involved in designing a backup and recovery solution using NetWorker.

Backing Up and Recovering Clusters with EMC NetWorker
2 TU e-Learning 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 NetWorker Module for Exchange Server
2 TU e-Learning 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
2 TU e-Learning 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 PowerSnap Overview
2 TU e-Learning 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
2 TU e-Learning 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.

EMC NetWorker Module for SAP R/3 with Oracle
2 TU e-Learning 2 Hours

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

EMC NetWorker De-Duplication
2 TU e-Learning 2 Hours

This course provides participants with the knowledge necessary to configure and manage NetWorker de-duplication backups.

Ionix for Storage Resource Management (ControlCenter)

Storage Administrator

For any storage professional who deploys and manages storage resource management and reporting solutions, this curriculum delivers 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
	Storage Management Specialist Exam for Storage Administrators (E20-582)					
Control Center ValuePak	**ControlCenter StorageScope Reporting** ControlCenter StorageScope 6.0, basic reporting scenarios, advanced reporting scenarios			2 Hours	• Utilize StorageScope SRM views, dashboard snaphots, and built-in reports • Use the Query Builder to create custom queries and extract detailed information about your storage environment	SPECIALIST
	ControlCenter Management 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		5 Days		• Determine and administer ControlCenter security, users, resource allocation/ utilization and data collection policies • Manage Alerts and Autofixes, customize reports, and leverage performance management tools • Perform configuration management tasks for SAN and storage devices and business continuity operations	
	Symmetrix Management Console (SMC) Fundamentals Documentation and Installation, SMC Interface, Configuration, Replication Operations, SMC comparison to other Symmetrix management tools, Troubleshooting			2 Hours	• Symmetrix configuration and replication operations • SMC Differences with Solutions Enabler SYMCLI	
	ControlCenter Install and Upgrade Planning for, installing, and upgrading ControlCenter			2 Hours	• Identify the references for planning and installing ControlCenter • Prepare the necessary information to install or upgrade ControlCenter	
	ControlCenter Foundations ControlCenter terminology, features, architecture			2 Hours	• Describe the architectural components and theory of operations of ControlCenter • Use ControlCenter to carry out common storage management tasks	
	CLARiiON Basic Management Navisphere Manager and CLI, basic management functions, CLARiiON storage platform			2 Hours	• Describe the utilities used to manage CLARiiON arrays and the Navisphere Manager GUI • Create and manage storage objects with Navisphere Manager	
	Celerra Foundations Celerra Architecture, Theory of Operations, Features and Functions, Business Continuity and Backup Solutions, Platforms, Benefits and Requirements			2 Hours	• Identify the concepts, architecture, terminology, and environmental aspects of NAS using the Celerra • Describe Celerra features, functions, and Management software offerings • Different Celerra Business Continuity options and Backup solutions	
	Connectrix Foundations SAN Architecture and Components, Fabric Topologies, Connectrix Range, Security, Management Tools, IP Based SAN Extension			1 Hour	• Components, services, and FC Protocol used in a Storage Area Network • Identify Fabric Topologies and different types of Connectrix Products • Explain how to secure a SAN using series-specific solutions	
	CLARiiON Foundations CLARiiON models and components, management options, features			2 Hours	• Identify supported CLARiiON RAID Types • Identify CLARiiON data integrity and availability features • Identify CLARiiON management options and storage provisioning objectss	
	SRDF Foundations Features, architecture, theory of operations and benefits of the SRDF family of Symmetrix remote replication solutions			2 Hours	• Describe architectural components and theory of operations of SRD • Explain how various replication options of SRDF can be integrated into Symmetrix DMX business continuity/disaster recovery environment	
	TimeFinder Foundations Features, architecture, theory of operations, and benefits of the TimeFinder family of Symmetrix local replication solutions			2 Hours	• Describe the architectural components and theory of operations of TimeFinder • Explain how various replication options of TimeFinder can be integrated into Symmetrix business continuity / disaster recovery environment	
	Symmetrix Foundations Symmetrix disk array architecture, volume protection, I/O path, connectivity , vaulting and high availability features			2 Hours	• Draw and describe the basic architecture of Symmetrix DMX and V-Max • Theory of operations, connectivity options, and key features	
	Information Storage and Management Exam (E20-001)					
Information Storage and Management	**Information Storage and Management** (5 days) OR (20 hours) (4 e-Learning modules) Information Storage and Management (ISM) is the only course of its kind to fill the knowledge gap in understanding varied components of modern information storage infrastructure. It provides a strong understanding of information storage technologies which prepares you to learn advanced concepts, technologies and also enable you to make more informed decisions in an increasingly complex IT environment. You will learn about the architectures, features, and benefits of Intelligent Storage Systems; storage networking technologies such as FC-SAN, NAS, and IP-SAN; long-term archiving solution – CAS; business continuity solutions such as backup and replication, the increasingly critical area of information security, and the emerging field of storage virtualization including storage resource management. The technologies described in the course are illustrated and reinforced with EMC product examples. Realistic case studies enable the participant to design the most appropriate solution for given sets of criteria.					ASSOCIATE

Purchase Options

Information Storage and Management eValuePak
CE-eVALPAKSTF $800

Information Storage and Management ValuePak
CE-VALPAKSTF $2,700

Control Center ValuePak
CE-VALPAKCC $5,000
*Contains Instructor-Led

Control Center Video ValuePak*
CE-VIDVPKCC $3,000
*Contains Video-ILT

For details on purchase options see page 77.

Expert Level Knowledge

ControlCenter Alerts, Monitoring, and Framework Integration
20 TU Online ILT 12 Hours

In this course, students will learn how to customize ControlCenter version 6.0 alerts in a way that best suits their needs. The course will cover the benefits of alerts and the need for appropriate business processes to resolve problems. Much of the course will include detailed discussion about the Health, Capacity and Performance related alerts including the methodology and considerations for deploying them.

Symmetrix Performance Workshop
40 TU ILT 4 Days

This course analyzes the performance of Symmetrix DMX and V-Max-series arrays using ControlCenter Performance Manager v6.1 and Symmetrix Performance Analyzer v1.1. Through extensive discussion of Symmetrix architecture, you will learn how data is processed by each component and which workload characteristics produce the highest levels of performance.

ControlCenter StorageScope Reporting Workshop
40 TU ILT 4 Days

In this course, students will learn to write effective reports using the ControlCenter 6.0 StorageScope Repository. Lecture will focus on the most often used tables that store properties, trend, group, and relationship data. Students will learn how to join and filter these tables to create useful results, and how to avoid schema pitfalls.

ControlCenter StorageScope Reporting
3 TU e-Learning 2 Hours

ControlCenter StorageScope Reporting is a specialist level class that uses built-in and customizable features to create advanced reporting solutions in a ControlCenter 6.0 environment. SRM Views and Top 10 lists provide a quick insight to used and available ports as well as fabric information.

ControlCenter 6.0 Differences
3 TU e-Learning 2 Hours

This course presents the major differences in ControlCenter version 6.0. Approximately half of the coverage is given to the new StorageScope features, which have completely changed with this version. Other major changes such as Cisco VSAN management and VMware monitoring are also given special emphasis. A variety of other support, architecture, security, and usability changes are also included.

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: SAN ValuePak; Information Storage and Management

Levels: SPECIALIST; ASSOCIATE

Courses	Video Instructor-Led Learning	Instructor-Led Training	e-Learning	Course Objectives
Storage Area Network (SAN) Specialist Exam For Storage Administrators (E20-532)				
SAN Management 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		• Perform switch management tasks using native switch tools • Manage SAN environment (hosts, switches, and storage) using EMC tools • Explain SAN management best practices including performance, monitoring, and reporting
Connectrix MDS-Series Switch Architecture and Management MDS configuration, basic implementation, and ongoing management interfaces, switch segmentation with VSANs and scalability with SAN extension			2-5 Hours	• Describe the various MDS Series switch models and their architectures • Identify the tools available for configuring and managing the MDS-series switches
Connectrix B Series Architecture and Management Common Switch Architecture, Model Hierarchy and Functionality, Native Switch Tools, Optional Switch Tools, Switch Security			2 Hours	• Describe the various B Series switch models and their architectures • Identify the tools available for configuring and managing the B-series switches
PowerPath Configuration and Administration Features and functionality of PowerPath across multiple UNIX and Windows platforms, for both Symmetrix and CLARiiON storage platform			2 Hours	• Describe PowerPath architecture and its load balancing policies • Explain PowerPath connectivity and configuration in both iSCSI and Fibre Channel environments
SAN Storage Protocols Fibre Channel, iSCSI, FCIP, FCoE			4 Hours	• IDefine the basic architecture of iSCSI, FCIP, FCoE • Identify the various types of logins and authentication • Define name resolution and addressing • Explain potential SAN topology solutions through examples
Basic Network Environment ARPA Network Architecture, Network and Transport Layers, Application Layer, and Troubleshooting			5 Hours	• Describe the components of a typical network infrastructure • Identify basic network concepts that will help to configure and manage EMC products
PowerPath Foundations PowerPath terminology, features, architecture, theory of operations and management			1 Hour	• Discuss the features and benefits of PowerPath in an open systems host environment • Explain how PowerPath achieves transparent recovery of host to storage channels
CLARiiON Foundations CLARiiON models and components, management options, features			2 Hours	• Identify supported CLARiiON RAID Types • Identify CLARiiON data integrity and availability features • Identify CLARiiON management options and storage provisioning objectss
Symmetrix Foundations Symmetrix disk array architecture, volume protection, I/O path, connectivity , vaulting and high availability features			2 Hours	• Draw and describe the basic architecture of Symmetrix DMX and V-Max • Theory of operations, connectivity options, and key features
Information Storage and Management Exam (E20-001)				

Information Storage and Management (5 days) OR (20 hours) (4 e-Learning modules)

Information Storage and Management (ISM) is the only course of its kind to fill the knowledge gap in understanding varied components of modern information storage infrastructure. It provides a strong understanding of information storage technologies which prepares you to learn advanced concepts, technologies and also enable you to make more informed decisions in an increasingly complex IT environment. You will learn about the architectures, features, and benefits of Intelligent Storage Systems; storage networking technologies such as FC-SAN, NAS, and IP-SAN; long-term archiving solution – CAS; business continuity solutions such as backup and replication, the increasingly critical area of information security, and the emerging field of storage virtualization including storage resource management. The technologies described in the course are illustrated and reinforced with EMC product examples. Realistic case studies enable the participant to design the most appropriate solution for given sets of criteria.

Purchase Options

Information Storage and Management eValuePak
CE-eVALPAKSTF $800

Information Storage and Management ValuePak
CE-VALPAKSTF $2,700

SAN ValuePak*
CE-VALPAKSAN $4,000
*Contains Instructor-Led

SAN Video ValuePak*
CE-VIDVPKSAN $2,400
*Contains Video-ILT

For details on purchase options see page 77.

Additional Training

Host to Storage SAN Implementation
50 TU ILT 5 Days

This course focuses on SAN implementation activities including SAN, switch, host, and storage considerations. The different UNIX (AIX, HP-UX, Solaris, and Linux) and Windows hosts are configured to use storage through a SAN. SAN switches are administered through their CLI and GUI management tools to enable secure communication between the hosts and storage. EMC CLARiiON and Symmetrix storage arrays are administered through Solutions Enabler, Navisphere Manager, and NaviCLI to meet the host's needs.

Advanced SAN Implementation
50 TU ILT 5 Days

This course provides the learner with hands on experience in a workshop setting with the following: configuring advanced SAN solutions; implementing diverse solutions; merging homogeneous and heterogeneous fabrics; implementing SAN extension; implementing SAN security and array based access control lists; booting host environments from SAN attached arrays; virtualizing SAN environments.

Advanced SAN Design Workshop
40 TU ILT 4 Days

The course will include thorough coverage of advanced SAN design topics; incorporating traditional FC-SAN fabrics; IP-SAN environments; geographically dispersed SAN using FCIP, iSCSI, FCoE; and SAN security and management. This will be solutions based training, with concentrated participant interaction regarding various design scenarios and the application of design theory.

SAN Monitoring and Policy Management
4 TU e-Learning 3 Hours

This course provides a detailed overview of SAN monitoring and policy management. It discusses the key aspects and limitations, and how industry standards such as SMI-S and CIM can help overcome these limitations. SAN device monitoring metrics, thresholds, and ways to configure them with EMC tools such as ControlCenter SAN Manager and OEM tools for Connectrix B and MDS-Series switches are also discussed

PowerPath Encryption with RSA Implementation
4 TU e-Learning 2 Hours

This course is designed to provide a technical introduction to PowerPath Encryption with RSA to a variety of audiences. PowerPath Encryption with RSA leverages a RSA Key Manager server to encrypt data at rest, preventing lost or stolen media from being readable. The course will discuss the motivation behind encryption and how PowerPath Encryption with RSA protects data at rest.

PowerPath Migration Enabler Implementation
4 TU e-Learning 2.5 Hours

This Course is designed for anyone involved with deploying and upgrading PowerPath Migration Enabler into EMC environments. An integral part of the training will address: overall positioning of the product; product architecture and operations; data migration planning and Migration Enabler procedures with regards to supported integrated products (Invista, Open Replicator, and Host-Based Logical Volume Manager).

PowerPath/VE Installation and Configuration
. 4 TU e-Learning 2.5 Hours

This Course focuses on the details for implementing and managing PowerPath/VE in a Virtual environment using PowerPath/VE. It goes into detail on the steps to install PowerPath/VE as well as commands used to display and manipulate the PowerPath configuration.

Implementing Cisco Storage Networking Solutions 3.0
50 TU ILT 5 Days

Implementing Cisco Storage Networking Solutions is a 5-day course that provides learners with fundamental skills in identifying and configuring the hardware and software components of the Cisco MDS 9000 product family, focusing on the key technologies and features that apply to departmental, mid-range, and enterprise SANs. The ICSNS course combines MDSCT and CMSE into a single course, updated for SAN-OS 2.1, 3.0, and with basic networking content added.

Implementing Cisco Advanced Storage Networking Solutions 3.0
50 TU ILT 5 Days

Implementing Advanced Cisco Storage Networking Solutions (IASNS) v3.0 is a 5-day lecture/lab course that provides learners with advanced skills in implementing and troubleshooting Cisco storage networks. This course focuses on advanced storage networking topics for the Cisco MDS Family of switches, including building virtual SAN fabrics, building heterogeneous SAN fabrics, configuring management and security services, configuring iSCSI, and advanced troubleshooting skills. A significant portion of the course is devoted to troubleshooting

Network-Attached Storage (NAS)—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
	Network Attached Storage (NAS) Specialist Exam For Storage Administrators (E20-538)					
Celerra ValuePak	**NAS Operations and Management with Celerra** Overview, Unisphere, Data Mover Failover, Basic Network Config, Configuring File Systems, Exporting File Systems to UNIX, Usermapper, Configuring CIFS, Virtual Data Movers, Managing Permissions on CIFS only Environment, Authentication, File Systems Quotas, CIFS Features, Networking Features, Celerra and ISCSI, Snapsure, Celerra Replicator, Celerra CLI		5 Days		• Implement Data Mover failover • Implement Basic network configurations • Configure and manage Celerra file systems • Export Celerra file systems for NFS and CIFS access • Implement Virtual Data Movers • Implement file system quotas on the Celerra • Implement CIFS features • Configure Celerra Networking features • Implement Celerra in an iSCSI environment • Implement SnapSure • Implement Celerra Replicator	SPECIALIST
	Celerra Platforms Architectural Overview The architectural overview of the current Celerra model family, Celerra Platforms Storage Capacity, Appendix for Legacy Celerra Platforms			2 Hours	• List the main components of a Celerra • Describe basic Celerra operations • Identify component connections • List storage capacities for the Celerra Platforms	
	Celerra AntiVirus Agent What is a virus and how it infects a system, CAVA's components, features, tools and utilities			1 Hour	• Describe the Celerra AntiVirus Agent purpose, functionality and methodology • Describe the CAVA components and concepts, tools and utilities	
	NAS Backup Concepts Backup Terminology, Tape as a Backup Medium, Backup Evolution, Network Data Management Protocol (NDMP) synopsis			2 Hours	• Describe the backup process using industry recognized terminology • List the various challenges faced in the Industry surrounding backups • Define the various methodologies of performing backup • Explain the role of Network Data Management Protocol (NDMP)	
	CLARiiON Foundations CLARiiON models and components, management options, features			2 Hours	• Identify supported CLARiiON RAID Types • Identify CLARiiON data integrity and availability features • Identify CLARiiON management options and storage provisioning objectss	
	Connectrix Foundations Storage Connectivity Overview, SAN Architecture and Components, SAN Fabric Topologies, EMC's Connectrix Range, Securing a SAN, SAN Management Tools, IP Based SAN Extension, SAN Technical Positioning			1 Hour	• Components, services, and FC Protocol used in a Storage Area Network • Identify Fabric Topologies and different types of Connectrix Products • Explain how to secure a SAN using series-specific solutions	
	Celerra Foundations Celerra Architecture, Theory of Operations, Features and Functions, Business Continuity and Backup Solutions, Platforms, Benefits and Requirements			2 Hours	• Identify the concepts, architecture, terminology, and environmental aspects of NAS using the Celerra • Describe Celerra features, functions, and Management software offerings • Different Celerra Business Continuity options and Backup solutions	
	Information Storage and Management Exam (E20-001)					
Information Storage and Management	**Information Storage and Management** (5 days) OR (20 hours) (4 e-Learning modules) Information Storage and Management (ISM) is the only course of its kind to fill the knowledge gap in understanding varied components of modern information storage infrastructure. It provides a strong understanding of information storage technologies which prepares you to learn advanced concepts, technologies and also enable you to make more informed decisions in an increasingly complex IT environment. You will learn about the architectures, features, and benefits of Intelligent Storage Systems; storage networking technologies such as FC-SAN, NAS, and IP-SAN; long-term archiving solution – CAS; business continuity solutions such as backup and replication, the increasingly critical area of information security, and the emerging field of storage virtualization including storage resource management. The technologies described in the course are illustrated and reinforced with EMC product examples. Realistic case studies enable the participant to design the most appropriate solution for given sets of criteria.					ASSOCIATE

Purchase Options

Information Storage and Management eValuePak
CE-eVALPAKSTF $800

Information Storage and Management ValuePak
CE-VALPAKSTF $2,700

Celerra ValuePak*
CE-VALPAKNS $5,000
*Contains Instructor-Led

Celerra Video ValuePak*
CE-VIDVPKNS $3,000
*Contains Video-ILT

For details on purchase options see page 77.

Expert Level Knowledge

Celerra MPFS Solution Design and Implementation Workshop
40 TU ILT 4 Days

This course provides an in-depth education of Celerra MPFS, focusing on its architecture and the types of environments and applications where it is best suited. The students will learn the steps needed to configure MPFS using the Fibre Channel and iSCSI protocols (integrated with a Cisco MDS switch and a CLARiiON combo card). This course also provides training on connecting to Windows and Linux hosts. Students are also introduced to the use of the MCM tool to analyze and configure an MPFS environment. Labs reinforce the lecture for both configurations. This course is currently supports Celerra version 5.6.

Celerra Multi-Path File System Overview
2 TU e-Learning 1 Hour

This course provides the learner with an overview of the architecture and software components of a Celerra MPFS Solution. Included in this course are details on component configuration, data flow, protocols handling client-to-server communication, protocols handling data and metadata management, and possible solution scenarios and applications for Celerra MPFS. This currently support Celerra version 5.6.

Celerra Replicator - CIFS Disaster Recovery
50 TU ILT 5 Days

This workshop provides the opportunity to use Celerra Replicator to configure and implement a Disaster Recovery (DR) plan for a Windows client environment. Management tasks such as replication configuration, failover and failback, access and permissions testing, and extensive file system management are covered. This course currently supports Celerra version 5.6.

Celerra Replicator Concepts
2 TU e-Learning 1 Hour

This course provides an overview of the capabilities and solution benefits of EMC Celerra Replicator. This course also focuses on Celerra Replicator configuration tasks. This course currently supports Celerra version 5.6.

Additional Training

VMware vSphere Integration with Celerra
50 TU ILT 5 Days

This instructor led, lab format course provides students with opportunity to acquire hands-on experience integrating EMC Celerra unified storage systems with VMware vSphere vCenter server and ESX 4.0/ESXi 4.0 servers. The course focuses on operations that IT professionals may require to perform provisioning, managing, migrating, replicating, and protecting the VMware vSphere virtual infrastructure on Celerra unified storage system. It also covers the VMware Site Recovery Manager (SRM) setup, configuration, management, and disaster recovery plan using EMC Celerra replicator technology. This course currently supports Celerra version 5.6.

Celerra NDMP Backup Solutions Workshop
40 TU ILT 4 Days

The Celerra NDMP Backup Solutions workshop is designed for customers, internal EMC Employees and partners involved with the planning, designing, deploying, and executing a Network Data Management Protocol (NDMP) backup and restore of EMC Celerra systems using EMC Networker and an EMC Disk Library (EDL) or a Celerra Virtual Tape Library (VTLU). The lecture portion of the training will address Backup concepts/backup solutions, NDMP Theory of Operation, Celerra with EMC Backup Environment, an overview of Tape Unit Configuration. Labs will reinforce the information you have been taught explaining how to install, and configure the proposed backup solution.

NAS Performance Workshop
40 TU ILT 4 Days

The NAS Performance Workshop is an advanced level NAS course designed to provide NAS field personnel with the ability to design and implement NAS solutions with performance in mind. The student will learn to diagnose and troubleshoot NAS performance issues related to host (Celerra and client), network, storage array (CLARiiON), workload characteristics, and EMC features. This course currently supports Celerra 5.6.

EMC FMA Architecture and Management
3 TU e-Learning 4 Hours

This course describes the features and functionality provided with the File Management Appliance (FMA). The course will also cover the value, importance, and benefits of the product, as well as the theory of operations. The student will learn how to configure the appliance, as well as troubleshoot common problems. This course currently supports FMA version 7.2.

EMC File Virtualization Appliance Architecture and Overview
3 TU e-Learning 1.5 Hours

This course describes the features and functionality provided with the File Virtualization Appliance (FVA). It will also cover basic concepts, product value, theory of operations, and deployment considerations. This course currently supports FVA version 1.3.

Symmetrix Solutions Learning Path

Storage Administrator

For any storage professional who deploys and manages Symmetrix solutions in open systems environments. The Management curriculum offers the required knowledge and lab experiences to configure and manage Symmetrix storage systems using Solutions Enabler and Symmetrix Management Console (SMC). The Business Continuity Curriculum offers the required knowledge and lab experiences to fully exploit TimeFinder, SRDF and Open Replicator in open systems environments.

ValuePaks	Courses	Video Instructor-Led Learning	Instructor-Led Training	Online ILT	e-Learning	Course Objectives	Levels
	Symmetrix Solutions Specialist Exam for Storage Administrators (E20-517)*						
Symmetrix Business Continuity ValuePak	**Symmetrix Business Continuity Management** Symmetrix business continuity management and integration with Windows and UNIX hosts. TimeFinder local replication, SRDF two site remote replication and Open Replicator inter-array data migration and replication		5 Days	5 Days		• Use Solutions Enabler to perform TimeFinder/Clone and TimeFinder/Snap operations • Use Solutions Enabler to perform SRDF Synchronous and SRDF Asynchronous operations • Use Solutions Enabler to perform Open Replicator operations (push/pull ; hot/cold) • Describe open systems host considerations for Symmetrix business continuity • Describe consistency technologies for Symmetrix business continuity • Overview of Symmetrix Management Console (SMC) for business continuity operations	SPECIALIST
	Solutions Enabler Installation and Configuration Host Configuration, mapping, zoning and masking, environment variables, options file, daemon options file, gatekeeper management				2 Hours	• Describe Solutions Enabler installation procedure • List commonly used environment variables • Explain the use of the options file and daemon options file	
	Open Replicator Fundamentals Features, architecture, theory of operations and benefits of Open Replicator for Symmetrix				2 Hours	• Explain the concepts and benefits of Open Replicator • Describe the architecture, terminology and operations of Open Replicator	
	SRDF Foundations Features, architecture, theory of operations and benefits of the SRDF family of Symmetrix remote replication solutions				2 Hours	• Describe architectural components and theory of operations of SRD • Explain how various replication options of SRDF can be integrated into Symmetrix DMX business continuity/disaster recovery environment	
	TimeFinder Foundations Features, architecture, theory of operations, and benefits of the TimeFinder family of Symmetrix local replication solutions				2 Hours	• Describe the architectural components and theory of operations of TimeFinder • Explain how various replication options of TimeFinder can be integrated into Symmetrix business continuity / disaster recovery environment	
Symmetrix Management ValuePak	**Symmetrix Configuration Management** Configure a Symmetrix and prepare it for host access using Solutions Enabler and SMC. Different types of devices and their functions. Creation, mapping and masking of devices. Setting Symmetrix metrics and RDF group attributes. Virtual Provisioning and Dynamic LUN migration.		4 Days	4 Days		• Perform device configuration and masking with Solutions Enabler and SMC • Configure, RDF/A group attributes and RDF related parameters • Describe parameters to enable SRDF/A, concurrent & dynamic RDF • Describe SRDF/A parameters to change priority and cache usage • Create TimeFinder/Snap virtual and save devices • Describe the benefits of virtual provisioning • Create thin and data devices. Create/Expand data device pools • List the restrictions on use of thin devices	
	Symmetrix Management Console (SMC) Fundamentals Documentation and Installation, SMC Interface, Configuration, Replication Operations, SMC comparison to other Symmetrix management tools, Troubleshooting				2 Hours	• Symmetrix configuration and replication operations • SMC Differences with Solutions Enabler SYMCLI	
	PowerPath Foundations PowerPath terminology, features, architecture, theory of operations and management				1 Hour	• Discuss the features and benefits of PowerPath in an open systems host environment • Explain how PowerPath achieves transparent recovery of host to storage channels	
	Connectrix Foundations Storage Connectivity Overview, SAN Architecture and Components, SAN Fabric Topologies, EMC's Connectrix Range, Securing a SAN, SAN Management Tools, IP Based SAN Extension, SAN Technical Positioning				1 Hour	• Components, services, and FC Protocol used in a Storage Area Network • Identify Fabric Topologies and different types of Connectrix Products • Explain how to secure a SAN using series-specific solutions	
	Symmetrix Foundations Symmetrix disk array architecture, volume protection, I/O path, connectivity , vaulting and high availability features				2 Hours	• Draw and describe the basic architecture of Symmetrix DMX and V-Max • Theory of operations, connectivity options, and key features	
	Information Storage and Management Exam (E20-001)						
Information Storage and Management	**Information Storage and Management** (5 days) OR (20 hours) (4 e-Learning modules) Information Storage and Management (ISM) prepares you to learn advanced concepts, technologies and also enable you to make more informed decisions in an increasingly complex IT environment. You will learn about the architectures, features, and benefits of Intelligent Storage Systems; storage networking technologies such as FC-SAN, NAS, and IP-SAN; long-term archiving solution – CAS; business continuity solutions such as backup and replication, the increasingly critical area of information security, and the emerging field of storage virtualization including storage resource management. Realistic case studies enable the participant to design the most appropriate solution for given sets of criteria.						ASSOCIATE

Purchase Options

Symmetrix Management ValuePak*
CE-VALPAKSMGT $4,000
*Contains Instructor-Led or Online-ILT

Symmetrix Management Video ValuePak*
CE-VIDVPKSMGT $4,000
*Contains Video-ILT

Symmetrix Business Continuity ValuePak*
CE-VALPAKBC $5,000
*Contains Instructor-Led or Online-ILT

Symmetrix Business Continuity Video ValuePak*
CE-VIDVPKBC $3,000
*Contains Video-ILT

Additional Training

Symmetrix Performance Workshop
40 TU ILT 4 Days

This course analyzes the performance of Symmetrix DMX and V-Max-series arrays using ControlCenter Performance Manager v6.1 and Symmetrix Performance Analyzer v1.1. Through extensive discussion of Symmetrix architecture, you will learn how data is processed by each component and which workload characteristics produce the highest levels of performance.

VMware vSphere Integration with Symmetrix
50 TU ILT 5 Days

This instructor led, course provides students with opportunity to acquire hands-on experience integrating EMC Symmetrix V-MAX storage systems with VMware vSphere vCenter and ESX 4.0. The course focuses on operations that IT professionals may require to perform provisioning, managing, migrating, replicating, and protecting the VMware vSphere/Symmetrix V-MAX environment. It also covers EMC Storage Viewer, PowerPath/VE along with VMware Site Recovery Manager (SRM) using EMC SRDF technology.

EMC Open Replicator Workshop
20 TU VILT 2 Days

This Video-Instructor Led Training (V-ILT) course will lead the participants through the terminologies and technologies used in Open Replicator. The use of Hot Pull, Hot Push, Cold Pull and Cold Push will be discussed along with their advantages and restrictions. Demonstrated lab exercises will be limited to EMC arrays. Non-EMC array considerations will be presented.

Symmetrix Integration with Microsoft Exchange Workshop
30 TU ILT 3 Days

This course is designed to help students understand and implement proven integration methodologies for Microsoft Exchange Server with the Symmetrix V-Max array. Students will learn how to migrate an Exchange Server from direct-attached storage to a Symmetrix V-Max array. Through integration with Microsoft's Virtual Shadow Copy Service (VSS), students will implement local business continuance schemes using EMC's Replication Manager (5.x) and the TimeFinder Exchange Integration Module to create clones of production volumes.

Symmetrix Integration with SQL Server Workshop
30 TU ILT 3 Days

Students will learn how to migrate SQL Server databases from direct-attached storage to a Symmetrix V-Max array. Through integration with Microsoft's Virtual Shadow Copy Service (VSS) and SQL Virtual Device Interface, students will implement local business continuance schemes using EMC's Replication Manager (5.x) to create clones of production volumes. Solutions Enabler and the TimeFinder Integration Module for SQL Server are also discussed as methodologies for replicating SQL Server at the storage level.

Symmetrix Integration with Oracle Workshop
40 TU ILT 4 Days

Learn how to identify and create an optimal performance layout for an Oracle database application within a Symmetrix DMX / V-Max storage array infrastructure. Configure business continuity environments for the purpose of replicating an Oracle application; supporting database disaster recovery, backup and decision support situations. Discussions include Oracle integration with TimeFinder/Clone, TimeFinder/Snap, SRDF/S and SRDF/A. Consistency Technology is also discussed insuring a point-in-time Oracle environment can be replicated properly onto a target host.

CLARiiON Solutions Specialty Learning Path
Storage Administrator

EMC² PROVEN PROFESSIONAL

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 you to fully leverage high-availability CLARiiON solutions.

ValuePaks | Levels

Courses	Video Instructor-Led Learning	Instructor-Led Training	e-Learning	Course Objectives
CLARiiON Solutions Specialist Exam for Storage Administrators (E20-522)				
MirrorView & SAN Copy Configuration & Management SAN Copy and Incremental SAN Copy, MirrorView/A and MirrorView/S		1 Day		• Describe the MirrorView connectivity options • Explain how MirrorView makes remote copies of LUNs • List the required steps in MirrorView administration • Identify the features and functions of EMC SAN Copy. • Install EMC SAN Copy on a supported CLARiiON array
MirrorView and SAN Copy Foundations Remote Replication, MirrorView and SAN Copy Terminology, features architecture, theory of operations and management, and SAN Copy data mobility concepts			1 Hour	• Describe the architecture, features and benefits of remote replication on the CLARiiON storage platform • Explain the various CLARiiON remote replication solutions
CLARiiON Host Integration and Management with SnapView CLARiiON Overview, CLARiiON Security and Basic Management, CLARiiON Storage Provisioning and Management, Host Integration Basics, Host Integration - Windows, Host Configuration – Linux, ESX Server Storage Provisioning, Advanced Storage Pool and LUN Concepts, Alerts and Event Monitor, Navisphere Analyzer, Navisphere Quality of Service Manager (NQM), SnapView Principles, SnapView Snapshots, SnapView Clones	*	4 Days		• Revise and reinforce concepts related to CLARiiON hardware features • Revise and reinforce concepts related to CLARiiON software features • Integrate open systems hosts into CLARiiON environments • Use EMC Navisphere Manager and other components of the EMC Navisphere suite in a practical environment • Successfully complete the lab exercises
SnapView Foundations Local replication, SnapView terminology, features architecture, theory of operations and management, CLARiiON snapshots, and clones			1 Hour	• Describe the architecture, features and benefits of SnapView on the CLARiiON Storage Platform • Explain the various Local Replication Solutions available in SnapView
PowerPath Foundations PowerPath terminology, features, architecture, theory of operations and management			1 Hour	• Discuss the features and benefits of PowerPath in an open systems host environment • Explain how PowerPath achieves transparent recovery of host to storage channels
Connectrix Foundations EMC Connectrix B-Series, M-Series, and MDS-Series, EMC SAN Manager, Connectrix Manager, native switch management tools			1 Hour	• Describe the architecture and key features of the Connectrix B-, M-, and MDS-Series switches and directors • List and explain EMC and native switch management tools
CLARiiON Foundations CLARiiON models and components, management options, features			2 Hours	• Identify supported CLARiiON RAID Types • Identify CLARiiON data integrity and availability features • Identify CLARiiON management options and storage provisioning objectss
Information Storage and Management Exam (E20-001)				

CLARiiON Business Continuity ValuePak

SPECIALIST

Information Storage and Management

ASSOCIATE

Information Storage and Management (5 days) OR (20 hours) (4 e-Learning modules)

Information Storage and Management (ISM) is the only course of its kind to fill the knowledge gap in understanding varied components of modern information storage infrastructure. It provides a strong understanding of information storage technologies which prepares you to learn advanced concepts, technologies and also enable you to make more informed decisions in an increasingly complex IT environment. You will learn about the architectures, features, and benefits of Intelligent Storage Systems; storage networking technologies such as FC-SAN, NAS, and IP-SAN; long-term archiving solution – CAS; business continuity solutions such as backup and replication, the increasingly critical area of information security, and the emerging field of storage virtualization including storage resource management. The technologies described in the course are illustrated and reinforced with EMC product examples. Realistic case studies enable the participant to design the most appropriate solution for given sets of criteria.

Purchase Options

Information Storage and Management eValuePak
CE-eVALPAKSTF $800

Information Storage and Management ValuePak
CE-VALPAKSTF $2,700

CLARiiON Business Continuity ValuePak*
CE-VALPAKCBC $5,000
*Contains one Instructor-led

CLARiiON Business Continuity Video ValuePak*
CE-VIDVPKCBC $3,000
*Contains Video-ILT

For details on purchase options see page 77.

Expert Level Knowledge

CLARiiON Remote Replication Advanced Workshop
30 TU ILT 3 Days

This expert level workshop focuses on the deployment of CLARiiON Replication Software in a FLARE 24 CLARiiON environment. The skills taught here are useful for environments requiring data migration and/or disaster recovery solutions. Extensive hands-on labs are provided for MirrorView/S, MirrorView/A, SAN Copy, Incremental SAN Copy and FC/IP implementations. This class supports the EMC Proven Professional CLARiiON Expert track.

CLARiiON Performance Workshop
30 TU ILT 3 Days

This expert level course details the configuration and implementation of CLARiiON storage for optimal performance in customer environments. The skills taught here are useful for environments requiring careful initial data layout or analysis of potential, or real, performance issues. Extensive hands-on labs are provided for basic CLARiiON configurations, as well as those using SnapView, MirrorView, SAN Copy, and MirrorView/Asynchronous for backup, testing, and disaster recovery.

And one of the following:

Microsoft Exchange Integration with CLARiiON Workshop
40 TU ILT 4 Days

This workshop focuses on the deployment of Exchange 2007 in a FLARE 24 CLARiiON environment. Learn the best practices to implementing Exchange 2007 on an external CLARiiON storage array, such as spindle count, RAID configuration, and database layout. Also considered is local replication and recovery using EMC Replication Manager, including database DR and mailbox recovery. Finally, remote replication solutions—both synchronous as well as point in time—will be covered using such EMC technologies as MirrorView, San Copy, RepliStor, and RecoverPoint.

OR

Microsoft SQL Server Integration with CLARiiON Workshop
30 TU ILT 3 Days

This expert level workshop focuses on the deployment of SQL Server 2005 in a FLARE 24 CLARiiON environment. Learn the best practices to implementing SQL Server 2005 on an external CLARiiON storage array, such as spindle count, RAID configuration, and database layout. Also considered is local replication and recovery using EMC Replication Manager 5.0, including database DR. Finally, remote replication solutions—both synchronous as well as point in time—will be covered using such EMC technologies as MirrorView, San Copy, RepliStor, and RecoverPoint.

CLARiiON Solutions Expert Exam for Storage Administrators

EXAM E20-822

Additional Training

VMware vSphere Integration with CLARiiON
50 TU ILT 5 Days

This instructor-led course provides students with the opportunity to acquire hands-on experience integrating EMC CLARiiON storage with VMware vSphere ESX 4 Server. The course focuses on operations required when provisioning, managing, migrating and replicating CLARiiON storage to support a VMware vSphere ESX 4 Server, and examines some of the specifics of storage management in an ESX 4 Server environment. In addition topics will include the CLARiiON storage platform and ESX 4 Server virtualization platform, base connectivity, array management, virtual machine storage provisioning, storage visibility, multipathing, business continuance operations, disaster recovery operations (both with CLARiiON Replication Software) and CLARiiON / VMware storage best practices.

CLARiiON AX4-5 Fundamentals
2 TU e-Learning 2 Hours

This course provides the learners with an understanding of the CLARiiON AX4-5 series hardware and software components. It covers the features and installation procedures for installing an AX4-5 in a customer's environment. This course also covers startup and shutdown procedures, PowerPath, and future service pack release options.

CLARiiON AX4-5 Management
2 TU e-Learning 2 Hours

This course provides learners with a comprehensive look at the CLARiiON AX4-5 and AX4-5i series management software tools. It covers array initialization, management server utility, creating disk pools, virtual disks and hot spares, as well as diagnostic file creation.

FAST LUN Migrator for CLARiiON
2 TU e-Learning 2 Hours

This course introduces learners to Fully Automated Storage Tiering (FAST) LUN Migrator features. The focus is on its benefits, limitations, and implementation features. The course includes planning, design, and implementation considerations for FAST LUN Migrator

Backup and Recovery-Solutions Learning Path
Technology Architect

For any EMC Velocity² Partner who designs and architects backup and recovery solutions including NetWorker, Avamar, Data Protection Advisor (DPA), and EMC Disk Library. To achieve EMCTA Backup and Recovery Solutions specialist level certification, individuals are required to pass **both** E20-591 **and** E20-329.

ValuePaks	Courses	Video Instructor-Led Learning	Instructor-Led Training	e-Learning	Course Objectives	Levels
	Technology Architect Backup and Recovery Solutions Design Exam (E20-329)					SPECIALIST
	EMC Backup and Recovery Solutions Design Backup and Recovery Infrastructure Concepts, Assessing the Environment, Data Protection Advisor Solutions Design, Avamar Solutions Design, Disk Library Solutions Design, Data Domain Solutions Design, NetWorker Solutions Design		5 Days		• Identify the infrastructure aspects affecting the design of a backup and recovery solution • Describe the methods used to assess customer environments, including important items needed to design a solution • Define key information points for solutions using Data Protection Advisor, Avamar, Disk Library, Data Domain and NetWorker • Identify design and sizing best practices for the products listed above	
	AND **Backup and Recovery Solutions Specialist Exam for Technology Architects (E20-591)**					
	EMC Backup and Recovery Technologies Backup and Recovery Solutions Overview, Data Protection Advisor, NetWorker, Avamar, EMC Disk Library, Data Domain		5 Days		• Define common terms used in a backup and recovery solution • Distinguish the different technologies used in a backup and recovery solution • Describe the EMC backup and recovery portfolio • Identify product positioning, architecture, benefits, options, features and use cases	
	Information Storage and Management Exam (E20-001)					ASSOCIATE
	Information Storage and Management (5 days) OR (20 hours) (4 e-Learning modules) Information Storage and Management (ISM) is the only course of its kind to fill the knowledge gap in understanding varied components of modern information storage infrastructure. It provides a strong understanding of information storage technologies which prepares you to learn advanced concepts, technologies and also enable you to make more informed decisions in an increasingly complex IT environment. You will learn about the architectures, features, and benefits of Intelligent Storage Systems; storage networking technologies such as FC-SAN, NAS, and IP-SAN; long-term archiving solution – CAS; business continuity solutions such as backup and replication, the increasingly critical area of information security, and the emerging field of storage virtualization including storage resource management. The technologies described in the course are illustrated and reinforced with EMC product examples. Realistic case studies enable the participant to design the most appropriate solution for given sets of criteria.					

Purchase Options

EMCTA-BR Solutions Self-Paced PARTNERS ONLY*
CE-VALTABRSOL $1,200
*Contains associate level, two Video-ILT's, and three Proven Professional Exam vouchers.

EMCTA-BR Solutions Instructor-Led PARTNERS ONLY*
CE-ILTA-BRSOL $4,000
*Available February 14, 2011. Contains associate level, two Instructor-led courses, and three Proven Professional Exam vouchers.

Pricing shown reflects partner discount. For details on purchase options see page 77.

Expert Level Knowledge

EMC NetWorker PowerSnap Installation and Configuration
20 TU ILT 2 Days
In this course, participants learn to install and configure EMC NetWorker PowerSnap software to perform and backup Snapshots using EMC Symmetrix TimeFinder and EMC CLARiiON SnapView solutions.

Data Protection Advisor Implementation and Management
30 TU Online ILT 3 Days
This Online ILT course covers implementation and management tasks related to the Data Protection Advisor product. Learners will be presented to the procedures of installing the different DPA components (server and collectors) on different platforms using different database types.

EMC NetWorker Module for Oracle Implementation and Configuration
20 TU Online ILT 2 Days
This Online ILT course focuses on how EMC NetWorker Module for Oracle works in conjunction with Oracle and EMC NetWorker to provide a comprehensive Oracle data storage management system. The concepts covered include installing, configuring and troubleshooting NetWorker Module for Oracle. The course contains lectures, hands-on lab exercises and review questions. Lab exercises will be performed on Solaris 10 operating system with Oracle10gR2 and EMC NetWorker v7.4.

EMC NetWorker Module for Microsoft Applications
20 TU Online ILT 2 Days
This introductory course provides an overview of features and functionality introduced with the EMC NetWorker Module for Microsoft Applications. Prior knowledge of EMC NetWorker software is a prerequisite as this course only focuses on the NetWorker Module for Microsoft Applications.

EMC NetWorker Module for Databases and Applications
30 TU Online ILT 3 Days
This introductory course provides an overview of features and functionality introduced with the EMC NetWorker Module for Databases and Applications release 1.0. Prior knowledge of EMC NetWorker software is a prerequisite as this course only focuses on the NetWorker Module for Databases and Applications.

Backing Up and Recovering Clusters with EMC NetWorker
2 TU e-Learning 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.

Configuring EMC NetWorker in a Firewall Environment
2 TU e-Learning 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.

EMC NetWorker Module for Exchange Server
2 TU e-Learning 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
2 TU e-Learning 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
2 TU e-Learning 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.

EMC NetWorker PowerSnap Overview
2 TU e-Learning 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.

EMC NetWorker De-Duplication
2 TU e-Learning 2 Hours
This course provides participants with the knowledge necessary to configure and manage NetWorker de-duplication backups.

Implementing EMC License Manager
2 TU e-Learning 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.

Network-Attached Storage (NAS)—Learning Path

Technology Architect

For any Reseller Partner who analyzes, designs, architects, administers, and supports EMC NAS solutions, the Technology Architect NAS Essentials curriculum elevates your knowledge and skills to enhance your knowledge of technology, product features, operational theory, and functionality related to EMC NAS Series hardware and software. You will learn how to use EMC software to perform various management and administrative functions in a NAS environment via lectures, instructor demonstrations, and hands-on Labs.

ValuePaks	Courses	Video Instructor-Led Learning	Instructor-Led Training	e-Learning	Course Objectives	Levels
	Technology Architect Design Solutions Exam (E20-322)					SPECIALIST
	Solutions Design Concepts ValuePak V4 Compilation of e-Learning courses: Critical information for the gathering, analysis and design of specific information storage and management technologies **(see next page for specific technology segments)**			21 Hours	• Describe and interpret the important technical data to be gathered about customer's use of information storage and management technologies • Discuss the best-practices for configuring and deploying information storage and management technologies	
	Network Attached Storage (NAS) Specialist Exam for Technology Architects (E20-540)					SPECIALIST
	Celerra AntiVirus Agent What is a virus and how it infects a system, CAVA's components, features, tools and utilities			1 Hour	• Describe the Celerra AntiVirus Agent purpose, functionality and methodology • Describe the CAVA components and concepts, tools and utilities	
	NAS Backup Concepts Backup Terminology, Tape as a Backup Medium, Backup Evolution, Network Data Management Protocol (NDMP) synopsis			2 Hours	• List the various challenges faced in the Industry surrounding backups • Define the various methodologies of performing backup • Explain the role of Network Data Management Protocol (NDMP)	
	NAS Operations and Management with Celerra Overview, Unisphere, Data Mover Failover, Basic Network Config, Configuring File Systems, Exporting File Systems to UNIX, Usermapper, Configuring CIFS, Virtual Data Movers, Managing Permissions on CIFS only Environment, Authentication, File Systems Quotas, CIFS Features, Networking Features, Celerra and ISCSI, Snapsure, Celerra Replicator, Celerra CLI		5 Days		• Implement Data Mover failover • Implement Basic network configurations • Configure and manage Celerra file systems • Export Celerra file systems for NFS and CIFS access • Implement Virtual Data Movers • Implement file system quotas on the Celerra • Implement CIFS features • Configure Celerra Networking features • Implement Celerra in an iSCSI environment • Implement SnapSure • Implement Celerra Replicator	
	Celerra Planning and Design Overview Planning and Design Objectives, Concepts and Terminology, Celerra Replication Technologies and iSCSI, Consultative Analysis, Analysis and Configuration Tools, SVC Qualifier / RPQ,Best Practices			2 Hours	• Identify EMC NAS Opportunities • Qualify EMC NAS solutions • Propose a NAS solution to a customer • Prepare implementation documentation	
	Celerra Platforms Architectural Overview Architectural overview of the current Celerra model family, Celerra Platforms Storage Capacity, Appendix for Legacy Celerra Platforms			2 Hours	• Describe basic Celerra operations • Identify component connections • List storage capacities for the Celerra Platforms	
	Celerra Foundations Celerra Architecture, Features and Functions, Business Continuity and Backup Solutions, Platforms, Benefits and Requirements			2 Hours	• Identify the concepts, architecture, terminology, and environmental aspects • Describe Celerra features, functions, and Management software offerings • Different Celerra Business Continuity options and Backup solutions	
	Connectrix Foundations Storage Connectivity, Architecture and Components, Fabric Topologies, Securing a SAN, Management Tools, IP Based SAN Extension			1 Hour	• Components, services, and FC Protocol used in a Storage Area Network • Identify Fabric Topologies and different types of Connectrix Products • Explain how to secure a SAN using series-specific solutions	
	CLARiiON Foundations CLARiiON models and components, management options, features			2 Hours	• Identify supported CLARiiON RAID Types • Identify CLARiiON data integrity and availability features • Identify CLARiiON management options and storage provisioning objectss	
	Information Storage and Management Exam (E20-001)					ASSOCIATE

Information Storage and Management (5 days) OR (20 hours) (4 e-Learning modules)

Information Storage and Management (ISM) is the only course of its kind to fill the knowledge gap in understanding varied components of modern information storage infrastructure. It provides a strong understanding of information storage technologies which prepares you to learn advanced concepts, technologies and also enable you to make more informed decisions in an increasingly complex IT environment. You will learn about the architectures, features, and benefits of Intelligent Storage Systems; storage networking technologies such as FC-SAN, NAS, and IP-SAN; long-term archiving solution – CAS; business continuity solutions such as backup and replication, the increasingly critical area of information security, and the emerging field of storage virtualization including storage resource management. The technologies described in the course are illustrated and reinforced with EMC product examples. Realistic case studies enable the participant to design the most appropriate solution for given sets of criteria.

Purchase Options

EMCTA-NAS Self-Paced PARTNERS ONLY*

CE-VALTA-NS $1,200

*Contains associate level, as well as one Video-ILT, twenty-one self-paced e-Learning courses and three Proven Professional Exam vouchers. Pricing shown reflects partner discount.

EMCTA-NAS Instructor-Led PARTNERS ONLY*

CE-ILTA-NA $4,000

* Available February 14, 2011. Contains associate level, as well as one Instructor-Led course, one Video-ILT, twenty-one self-paced e-Learning courses and three Proven Professional Exam vouchers. Pricing shown reflects partner discount

Expert Level Knowledge

NAS Symmetrix Business Continuity
30 TU ILT 3 Days

This course focuses on business continuity tools used to provide local and remote file system replication for NAS in a Symmetrix environment. It provides students lecture and hands-on instruction (40% lecture/60% lab) on the functionality and the implementation of NAS solutions using TimeFinder/FS and Symmetrix Remote Data Facility (SRDF). The course also focuses on practical implementation ideas for these solutions.

Celerra Gateway Install
3 TU e-Learning 1 Hour

This course focuses on the installation tasks of an EMC Celerra NS Gateway model. Pre-installation tasks, such as cabling and site preparation, as well as post installation, such as making storage available to users, are covered. The storage array that will be used in this course is the Celerra CLARiiON. This course currently supports Celerra version 5.6.

Celerra Replicator - CIFS Disaster Recovery
50 TU ILT 5 Days

This workshop provides the opportunity to use Celerra Replicator to configure and implement a Disaster Recovery (DR) plan for a Windows client environment. Management tasks such as replication configuration, failover and failback, access and permissions testing, and extensive file system management are covered. This course currently supports Celerra version 5.6.

Celerra Replicator Concepts
2 TU e-Learning 1 Hour

This course provides an overview of the capabilities and solution benefits of EMC Celerra Replicator. This course also focuses on Celerra Replicator configuration tasks. This course currently supports Celerra version 5.6.

Celerra MPFS Solution Design and Implementation Workshop
40 TU ILT 4 Days

This course provides an in-depth education of Celerra MPFS, focusing on its architecture and the types of environments and applications where it is best suited. The students will learn the steps needed to configure MPFS using the Fibre Channel and iSCSI protocols (integrated with a Cisco MDS switch and a CLARiiON combo card). This course also provides training on connecting to Windows and Linux hosts. Students are also introduced to the use of the MCM tool to analyze and configure an MPFS environment. Labs reinforce the lecture for both configurations. This course is currently supports Celerra version 5.6.

Celerra Multi-Path File System Overview
2 TU e-Learning 1 Hour

This course provides the learner with an overview of the architecture and software components of a Celerra MPFS Solution. Included in this course are details on component configuration, data flow, protocols handling client-to-server communication, protocols handling data and metadata management, and possible solution scenarios and applications for Celerra MPFS. This currently support Celerra version 5.6.

Additional Training

VMware vSphere Integration with Celerra
50 TU ILT 5 Days

This instructor led, lab format course provides students with opportunity to acquire hands-on experience integrating EMC Celerra unified storage systems with VMware vSphere vCenter server and ESX 4.0/ESXi 4.0 servers. The course focuses on operations that IT professionals may require to perform provisioning, managing, migrating, replicating, and protecting the VMware vSphere virtual infrastructure on Celerra unified storage system. It also covers the VMware Site Recovery Manager (SRM) setup, configuration, management, and disaster recovery plan using EMC Celerra replicator technology. This course currently supports Celerra version 5.6.

NAS Performance Workshop
40 TU ILT 4 Days

The NAS Performance Workshop is an advanced level NAS course designed to provide NAS field personnel with the ability to design and implement NAS solutions with performance in mind. The student will learn to diagnose and troubleshoot NAS performance issues related to host (Celerra and client), network, storage array (CLARiiON), workload characteristics, and EMC features. This course currently supports Celerra 5.6.

Celerra NDMP Backup Solutions Workshop
40 TU ILT 4 Days

The Celerra NDMP Backup Solutions workshop is designed for customers, internal EMC Employees and partners involved with the planning, designing, deploying, and executing a Network Data Management Protocol (NDMP) backup and restore of EMC Celerra systems using EMC Networker and an EMC Disk Library (EDL) or a Celerra Virtual Tape Library (VTLU). The lecture portion of the training will address Backup concepts/backup solutions, NDMP Theory of Operation, Celerra with EMC Backup Environment, an overview of Tape Unit Configuration. Labs will reinforce the information you have been taught explaining how to install, and configure the proposed backup solution.

Solutions Design Concepts ValuePak V4

This suite of e-Learning modules supports the E20-322 Technology Architect Solutions Design Exam, an option at the Specialist level for all Technology Architect specialties.

- Backup and Recovery Solutions Design Concepts V4
- CLARiiON Solutions Design Concepts V4
- Data Archiving Solutions Design Concepts V4
- Data Migration Solutions Design Concepts V4
- Information Security Solutions Design Concepts V4
- Microsoft Exchange and SQL Server Solutions Design Concepts V4
- NAS Solutions Design Concepts V4
- Oracle Solutions Design Concepts V4
- SAN Solutions Design Concepts V4 - Part 1
- SAN Solutions Design Concepts V4 - Part 2
- Storage Management Solutions Design Concepts V4
- Symmetrix Solutions Design Concepts V4
- Virtualization Solutions Design Concepts V4 - Part 1
- Virtualization Solutions Design Concepts V4 - Part 2

Content-Addressed Storage (CAS)—Learning Path

Technology Architect

For any EMC Velocity² Partner who designs and architects content-addressed storage (CAS) solutions using EMC technologies, this certification aligned curriculum offers required knowledge and formal validation for a credible pre-sales technical individual. Gather, analyze, design, and propose a solution that fully leverages the capabilities of EMC Centera and its active archive and advanced retention capabilities to meet a customer's compliance, legal discovery, or tiered storage requirements.

ValuePaks	Courses	Video Instructor-Led Learning	Instructor-Led Training	Online ILT	e-Learning	Course Objectives	Levels
						Technology Architect Solutions Design Exam (E20-322)	SPECIALIST
	Solutions Design Concepts ValuePak V4 Compilation of e-Learning courses: Critical information for the gathering, analysis and design of specific information storage and management technologies				21 Hours	• Describe and interpret the important technical data to be gathered about a customer's use of information storage and management technologies • Discuss the best-practices for configuring and deploying information storage and management technologies	
						Content Addressed Storage (CAS) Specialist Exam for Technology Architects (E20-570)	
	CAS Management EMC Centera management, day to day tasks and basic trouble-shooting steps		3 Days	3 Days		• Explain how data is stored, retrieved, and replicated on EMC Centera • Perform day-to-day management tasks on a EMC Centera using the native tools and create /test virtual pools and access profiles • Perform EMC Centera replication and basic performance and networking troubleshooting	
	Centera Universal Access CUA software installation process for a Centera node and Dell PowerEdge 2650/2850, features and configurations available for CUA, Monitoring and managing a CUA, Centera File Archiver				2 Hours	• Explain EMC Centera Universal Access (CUA) theory of operations and describe the installation and configuration process • Define the tools available to monitor and manage CUA	SPECIALIST
	Centera Architectural Overview Identify the hardware and software components of a EMC Centera, Define the tools available to manage the EMC Centera, Describe EMC Centera configurations and their functions				2 Hours	• Identify the hardware and software components and explain the architecture of the EMC Centera platform • Describe various EMC Centera configurations and the available tools for management	
	Basic Network Environment ARPA Network Architecture, Network and Transport Layers, Application Layer and Troubleshooting				5 Hours	• Describe the components of a typical network infrastructure • Identify basic network concepts that will help in configuring and managing EMC products	
						Information Storage and Management Exam (E20-001)	ASSOCIATE

Information Storage and Management (5 days) OR (20 hours) (4 e-Learning modules)

Information Storage and Management (ISM) is the only course of its kind to fill the knowledge gap in understanding varied components of modern information storage infrastructure. It provides a strong understanding of information storage technologies which prepares you to learn advanced concepts, technologies and also enable you to make more informed decisions in an increasingly complex IT environment. You will learn about the architectures, features, and benefits of Intelligent Storage Systems; storage networking technologies such as FC-SAN, NAS, and IP-SAN; long-term archiving solution – CAS; business continuity solutions such as backup and replication, the increasingly critical area of information security, and the emerging field of storage virtualization including storage resource management. The technologies described in the course are illustrated and reinforced with EMC product examples. Realistic case studies enable the participant to design the most appropriate solution for given sets of criteria.

Purchase Options

EMCTA-CAS Self-Paced PARTNERS ONLY*

CE-VALTA-CAS $1,200

*Contains associate level, as well as one Video-ILT, seventeen self-paced e-Learning courses and three Proven Professional Exam vouchers. Pricing shown reflects partner discount.

EMCTA-CAS Instructor-Led PARTNERS ONLY*

CE-ILTA-CAS $4,000

* Available February 14, 2011. Contains associate level, as well as one Instructor-Led or Online-ILT, seventeen self-paced e-Learning courses and three Proven Professional Exam vouchers. Pricing shown reflects partner discount

Symmetrix Solutions
Technology Architect

For any EMC Velocity2 Partner who designs and architects Symmetrix solutions in open systems environments; including local and remote replication technologies and configuration using Solutions Enabler and Symmetrix Management Console (SMC). This certification aligned curriculum offers required knowledge and formal validation for a credible pre-sales technical individual. Gather, analyze, design, and propose a solution that fully leverages the capabilities of Symmetrix to meet a customer's complex storage needs.

Courses	Video Instructor-Led Learning	Instructor-Led Training	e-Learning	Online ILT	Course Objectives	Levels
Technology Architect Solutions Design Exam (E20-322)						SPECIALIST
Solutions Design Concepts ValuePak V4 Compilation of e-Learning courses: critical information for the gathering, analysis, and design of specific information storage and management technologies			21 Hours		• Describe and interpret the important technical data to be gathered about a customer's use of information storage and management technologies • Discuss the best practices for configuring and deploying information storage and management technologies	
Symmetrix Solutions Specialist Exam for Technology Architects (E20-515)**						SPECIALIST
Symmetrix Business Continuity Management Symmetrix business continuity management and integration with Windows and UNIX hosts. TimeFinder local replication, SRDF two site remote replication and Open Replicator inter-array data migration and replication		5 Days		5 Days	• Use Solutions Enabler to perform TimeFinder/Clone and TimeFinder/Snap operations, SRDF Synchronous and SRDF Asynchronous operations • Use Solutions Enabler to perform Open Replicator operations • Describe open systems host considerations for Symmetrix business continuity • Describe consistency technologies for Symmetrix business continuity • Overview of Symmetrix Management Console (SMC) for business continuity	
Open Replicator Fundamentals Features, architecture, theory of operations and benefits of Open Replicator			2 Hours		• Explain the concepts and benefits of Open Replicator • Describe the architecture, terminology and operations of Open Replicator	
SRDF Foundations Features, architecture, theory of operations and benefits of the SRDF family of Symmetrix remote replication solutions			2 Hours		• Describe architectural components and theory of operations of SRD • Explain how various replication options of SRDF can be integrated into Symmetrix DMX business continuity/disaster recovery environment	
TimeFinder Foundations Features, architecture, theory of operations, and benefits of the TimeFinder family of Symmetrix local replication solutions			2 Hours		• Describe the architectural components and theory of operations of TimeFinder • Explain how various replication options of TimeFinder can be integrated into Symmetrix business continuity / disaster recovery environment	
Symmetrix Configuration Management Configure a Symmetrix and prepare it for host access using Solutions Enabler and SMC. Different types of devices and their functions. Creation, mapping and masking of devices. Setting Symmetrix metrics and RDF group attributes. Virtual Provisioning and Dynamic LUN migration.		4 Days		4 Days	• Perform device configuration and masking with Solutions Enabler and SMC • Configure, RDF/A group attributes and RDF related parameters • Describe parameters to enable SRDF/A, concurrent & dynamic RDF • Describe SRDF/A parameters to change priority and cache usage • Create TimeFinder/Snap virtual and save devices • Describe the benefits of virtual provisioning • Create thin and data devices. Create/Expand data device pools	
Symmetrix Management Console (SMC) Fundamentals Documentation and Installation, SMC Interface, Configuration, Replication Operations, SMC comparison to other management tools, Troubleshooting			2 Hours		• Symmetrix configuration and replication operations • SMC Differences with Solutions Enabler SYMCLI	
PowerPath Foundations PowerPath terminology, features, architecture, theory of operations and management			1 Hour		• Discuss the features and benefits of PowerPath in an open systems host environment • Explain how PowerPath achieves recovery of host to storage channels	
Connectrix Foundations Storage Connectivity Overview, SAN Architecture and Components, SAN Fabric Topologies, EMC's Connectrix Range, Securing a SAN, SAN Management Tools, IP Based SAN Extension, SAN Technical Positioning			1 Hour		• Components, services, and FC Protocol used in a Storage Area Network • Identify Fabric Topologies and different types of Connectrix Products • Explain how to secure a SAN using series-specific solutions	
Symmetrix Foundations Symmetrix disk array architecture, volume protection, I/O path, connectivity , vaulting and high availability features			2 Hours		• Draw and describe the basic architecture of Symmetrix DMX and V-Max • Theory of operations, connectivity options, and key features	
Information Storage and Management Exam (E20-001)						ASSOCIATE

Information Storage and Management (5 days) OR (20 hours) (4 e-Learning modules)
Information Storage and Management (ISM) prepares you to learn advanced concepts, technologies and also enable you to make more informed decisions in an increasingly complex IT environment. You will learn about the architectures, features, and benefits of Intelligent Storage Systems; storage networking technologies such as FC-SAN, NAS, and IP-SAN; long-term archiving solution – CAS; business continuity solutions such as backup and replication, the increasingly critical area of information security, and the emerging field of storage virtualization including storage resource management. The technologies described in the course are illustrated and reinforced with EMC product examples.

Purchase Options

EMCTA Symm. Solutions Self-Paced PARTNERS ONLY*

CE-VALTA-SBC $1,200

*Contains associate level, as well as two Video-ILT's, twenty-one self-paced e-Learning courses and three Proven Professional Exam vouchers. Pricing shown reflects partner discount.

EMCTA-Symm. Solutions Instructor-Led PARTNERS ONLY*

CE-ILTA-SBC $4,000

* Available February 14, 2011. Contains associate level, as well as two Instructor-Led or Online-ILT, twenty-one self-paced e-Learning courses and three Proven Professional Exam vouchers. Pricing shown reflects partner discount.

Expert Level Knowledge

Symmetrix Business Continuity Design
40 TU ILT 4 Days

This course focuses on the design of Symmetrix based business continuity solutions for local and remote replication. This course includes a thorough exposure to the procedures, methodologies and tools for designing replication solutions using both host based and Symmetrix data. All concepts are reinforced through hands-on lab activities.

SRDF/Star and Cascaded SRDF Solutions
4 TU e-Learning 1.5 Hours

This course covers 3-data-center SRDF solutions comprising Cascaded SRDF, SRDF/EDP and SRDF/Star in Open Systems environments. Underlying SRDF technologies used to implement Star are discussed in detail.

SRDF/CE for Microsoft Failover Clusters - Overview
3 TU e-Learning 1 Hour

This course provides an overview of the architecture and deployment of an SRDF/CE (Cluster Enabler) solution for Microsoft Failover Clusters. Introduction to MFC and its integration with SRDF/CE is described.

Symmetrix Security Concepts
2 TU e-Learning 1.25 Hours

This course provides participants with a conceptual approach to Symmetrix storage data security and its implications in view of government regulations and possible violations due to the high degree of technology available to aid unauthorized information access.

Symmetrix - Managing Performance
3 TU e-Learning 1 Hour

This course provides an overview of the tools and options available in the Symmetrix Array and its Enginuity Operating Environment, to manage and optimize the performance of the array.

Symmetrix Performance Workshop
40 TU ILT 4 Days

This course analyzes the performance of Symmetrix DMX and V-Max-series arrays using ControlCenter Performance Manager v6.1 and Symmetrix Performance Analyzer v1.1. Through extensive discussion of Symmetrix architecture, you will learn how data is processed by each component and which workload characteristics produce the highest levels of performance.

Symmetrix Integration with Microsoft Exchange
4 TU e-Learning 1.5 Hours

This course is designed to help students understand how to configure Microsoft Exchange Server with the Symmetrix V-Max array, including best practice methodologies to ensure superior availability and performance.

Symmetrix Integration with SQL Server
4 TU e-Learning 2 Hours

This course is designed to help students understand proven integration methodologies for Microsoft SQL Server with the Symmetrix V-Max array. Students will learn the benefits of migrating SQL Server databases from direct-attached storage to a Symmetrix V-Max array. Students will also understand how EMC's Replication Manager (5.x) can integrate with SQL Server to create clones of production volumes.

Symmetrix Integration with Oracle
4 TU e-Learning 4 Hours

Learn optimal performance layout considerations for an Oracle 11g database application within a Symmetrix infrastructure. This e-Learning presentation covers business continuity environments for the purpose of replicating an Oracle 11g application supporting database disaster recovery, backup, and decision support situations.

Symmetrix Solutions Expert Exam for Technology Architects

EXAM E20-816

Additional Training

VMware vSphere Integration with Symmetrix
50 TU ILT 5 Days

This instructor led, course provides students with opportunity to acquire hands-on experience integrating EMC Symmetrix V-MAX storage systems with VMware vSphere vCenter and ESX 4.0. The course focuses on operations that IT professionals may require to perform provisioning, managing, migrating, replicating, and protecting the VMware vSphere/Symmetrix V-MAX environment. It also covers EMC Storage Viewer, PowerPath/VE along with VMware Site Recovery Manager (SRM) using EMC SRDF technology.

Open Migrator/LM for Unix/Linux
2 TU e-Learning 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.

Open Migrator/LM for Windows Overview
2 TU e-Learning 2 Hours

This course provides the learner with an overview of online data migration using the Open Migrator (formally known as DRU) application.

Replication Manager Workshop
50 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.

SRDF/CE for MSCS Implementation and Management
30 TU ILT 4 Days

This course focuses on implementing and managing SRDF/CE (Cluster Enabler) in a MSCS (Microsoft Cluster Services) environment.

Solutions Design Concepts ValuePak V4

This suite of e-Learning modules supports the E20-322 Technology Architect Solutions Design Exam, an option at the Specialist level for all Technology Architect specialties.

- Backup and Recovery Solutions Design Concepts V4
- CLARiiON Solutions Design Concepts V4
- Data Archiving Solutions Design Concepts V4
- Data Migration Solutions Design Concepts V4
- Information Security Solutions Design Concepts V4
- Microsoft Exchange and SQL Server Solutions Design Concepts V4
- NAS Solutions Design Concepts V4
- Oracle Solutions Design Concepts V4
- SAN Solutions Design Concepts V4 - Part 1
- SAN Solutions Design Concepts V4 - Part 2
- Storage Management Solutions Design Concepts V4
- Symmetrix Solutions Design Concepts V4
- Virtualization Solutions Design Concepts V4 - Part 1
- Virtualization Solutions Design Concepts V4 - Part 2

CLARiiON Solutions Learning Path
Technology Architect

For any EMC Velocity² Partner who designs and architects SAN solutions using EMC CLARiiON platform and related management and data replication technologies, this certification aligned curriculum offers required knowledge and formal validation for a credible pre-sales technical individual. Gather, analyze, design, and propose a solution that fully leverages the capabilities of CLARiiON and its reliability and performance to meet a customer's complex storage needs.

ValuePaks	Courses	Video Instructor-Led Learning	Instructor-Led Training	e-Learning	Course Objectives	Levels
	Technology Architect Solutions Design Exam (E20-322)					SPECIALIST
	Solutions Design Concepts ValuePak V4 Compilation of e-Learning courses: Critical information for the gathering, analysis and design of specific information storage and management technologies **(see next page for specific technology segments)**			21 Hours	• Describe and interpret the important technical data to be gathered about a customer's use of information storage and management technologies • Discuss the best-practices for configuring and deploying information storage and management technologies	
	CLARiiON Solutions Specialist Exam for Technology Architects (E20-520)					SPECIALIST
	MirrorView & SAN Copy Configuration & Management SAN Copy and Incremental SAN Copy, MirrorView/A and MirrorView/S		1 Day		• Describe the MirrorView connectivity options • Explain how MirrorView makes remote copies of LUNs • List the required steps in MirrorView administration • Identify the features and functions of EMC SAN Copy. • Install EMC SAN Copy on a supported CLARiiON array	
	MirrorView and SAN Copy Foundations Remote Replication, MirrorView and SAN Copy Terminology, features architecture, theory of operations and management, and SAN Copy data mobility concepts			1 Hour	• Describe the architecture, features and benefits of remote replication on the CLARiiON storage platform • Explain the various CLARiiON remote replication solutions	
	CLARiiON Host Integration and Management with SnapView CLARiiON Overview, CLARiiON Security and Basic Management, CLARiiON Storage Provisioning and Management, Host Integration Basics, Host Integration - Windows, Host Configuration – Linux, ESX Server Storage Provisioning, Advanced Storage Pool and LUN Concepts, Alerts and Event Monitor, Navisphere Analyzer, Navisphere Quality of Service Manager (NQM), SnapView Principles, SnapView Snapshots, SnapView Clones		4 Days		• Revise and reinforce concepts related to CLARiiON hardware features • Revise and reinforce concepts related to CLARiiON software features • Integrate open systems hosts into CLARiiON environments • Use EMC Navisphere Manager and other components of the EMC Navisphere suite in a practical environment • Successfully complete the lab exercises	
	SnapView Foundations Local replication, SnapView terminology, features architecture, theory of operations and management, CLARiiON snapshots, and clones			1 Hour	• Describe the architecture, features and benefits of SnapView on the CLARiiON Storage Platform • Explain the various Local Replication Solutions available in SnapView	
	PowerPath Foundations PowerPath terminology, features, architecture, theory of operations and management			1 Hour	• Discuss the features and benefits of PowerPath in an open systems host environment • Explain how PowerPath achieves transparent recovery of host to storage channels	
	Connectrix Foundations EMC Connectrix B-Series, M-Series, and MDS-Series, EMC SAN Manager, Connectrix Manager, native switch management tools			1 Hour	• Describe the architecture and key features of the Connectrix B-, M-, and MDS-Series switches and directors • List and explain EMC and native switch management tools	
	CLARiiON Foundations CLARiiON models and components, management options, features			2 Hours	• Identify supported CLARiiON RAID Types • Identify CLARiiON data integrity and availability features • Identify CLARiiON management options and storage provisioning objectss	
	Information Storage and Management Exam (E20-001)					ASSOCIATE
	Information Storage and Management (5 days) OR (20 hours) (4 e-Learning modules) Information Storage and Management (ISM) is the only course of its kind to fill the knowledge gap in understanding varied components of modern information storage infrastructure. It provides a strong understanding of information storage technologies which prepares you to learn advanced concepts, technologies and also enable you to make more informed decisions in an increasingly complex IT environment. You will learn about the architectures, features, and benefits of Intelligent Storage Systems; storage networking technologies such as FC-SAN, NAS, and IP-SAN; long-term archiving solution – CAS; business continuity solutions such as backup and replication, the increasingly critical area of information security, and the emerging field of storage virtualization including storage resource management. The technologies described in the course are illustrated and reinforced with EMC product examples. Realistic case studies enable the participant to design the most appropriate solution for given sets of criteria.					

Purchase Options

EMCTA-CLN Solutions Self-Paced PARTNERS ONLY*

CE-VALTA-CLN $1,200

*Contains associate level, as well as one Video-ILT, nineteen self-paced e-Learning courses and three Proven Professional Exam vouchers. Pricing shown reflects partner discount

EMCTA-CLN Solutions Instructor-Led PARTNERS ONLY*

CE-ILTA-CLN $4,000

* Available February 14, 2011. Contains associate level, as well as one Instructor-Led, nineteen self-paced e-Learning courses and three Proven Professional Exam vouchers. Pricing shown reflects partner discount.

Expert Level Knowledge

CLARiiON Business Continuity Design
20 TU ILT 2 Days

This expert level class focuses on the design of solutions using CLARiiON Replication Software in a FLARE 29 environment. The skills taught here are useful for environments requiring backup, data migration and/or disaster recovery solutions. Design lab exercises are provided for MirrorView/S, MirrorView/A, SAN Copy, and Incremental SAN Copy implementations.

CLARiiON Performance Workshop
30 TU ILT 3 Days

This expert level course details the configuration and implementation of CLARiiON storage for optimal performance in customer environments. The skills taught here are useful for environments requiring careful initial data layout or analysis of potential, or real, performance issues. Extensive hands-on labs are provided for basic CLARiiON configurations, as well as those using SnapView, MirrorView, SAN Copy, and MirrorView/Asynchronous for backup, testing, and disaster recovery.

Microsoft Exchange Integration with CLARiiON Overview
3 TU e-Learning 2 Hours

This expert level web-based course focuses on the deployment of Exchange 2007 in a FLARE 24 CLARiiON environment. Participants learn best practices to implementing Exchange 2007 on an external CLARiiON storage array, such as spindle count, RAID configuration, and database layout. Also considered are local replication and recovery, including database DR and mailbox recovery. Finally, remote replication solutions, both synchronous as well as point in time, are covered using such EMC technologies as MirrorView, San Copy, RepliStor, and RecoverPoint.

SQL Server 2005 Integration with CLARiiON Overview
4 TU e-Learning 2 Hours

This web-based course focuses on the deployment of SQL Server 2005 in a FLARE 24 CLARiiON environment. Learn the best practices to implementing SQL Server 2005 on an external CLARiiON storage array, such as spindle count, RAID configuration, and database layout. Also considered is local replication and recovery using EMC Replication Manager 5.0, including database DR. Finally, remote replication solutions—synchronous and point in time—are covered using such EMC technologies as MirrorView, San Copy, RepliStor, and RecoverPoint.

CLARiiON Solutions Expert Exam for Technology Architects

EXAM E20-820

Additional Training

VMware vSphere Integration with CLARiiON
50 TU ILT 5 Days

This instructor-led course provides students with the opportunity to acquire hands-on experience integrating EMC CLARiiON storage with VMware vSphere ESX 4 Server. The course focuses on operations required when provisioning, managing, migrating and replicating CLARiiON storage to support a VMware vSphere ESX 4 Server, and examines some of the specifics of storage management in an ESX 4 Server environment. In addition topics will include the CLARiiON storage platform and ESX 4 Server virtualization platform, base connectivity, array management, virtual machine storage provisioning, storage visibility, multipathing, business continuance operations, disaster recovery operations (both with CLARiiON Replication Software) and CLARiiON / VMware storage best practices.

Replication Manager Workshop
50 TU ILT 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
30 TU ILT 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.

Solutions Design Concepts ValuePak V4

This suite of e-Learning modules supports the E20-322 Technology Architect Solutions Design Exam, an option at the Specialist level for all Technology Architect specialties.

- Backup and Recovery Solutions Design Concepts V4
- CLARiiON Solutions Design Concepts V4
- Data Archiving Solutions Design Concepts V4
- Data Migration Solutions Design Concepts V4
- Information Security Solutions Design Concepts V4
- Microsoft Exchange and SQL Server Solutions Design Concepts V4
- NAS Solutions Design Concepts V4
- Oracle Solutions Design Concepts V4
- SAN Solutions Design Concepts V4 - Part 1
- SAN Solutions Design Concepts V4 - Part 2
- Storage Management Solutions Design Concepts V4
- Symmetrix Solutions Design Concepts V4
- Virtualization Solutions Design Concepts V4 - Part 1
- Virtualization Solutions Design Concepts V4 - Part 2

EMC Storage and Information Infrastructure
Technology Architect

This curriculum enables you to have in-depth conversations with customers about core EMC technologies and products, and EMC information management strategy. You will be able to position core EMC product and technologies correctly; Identify and discuss key decision criteria and trade-offs among EMC solutions; and recommend optimal choices of core EMC technologies and products to meet a specific set of business and technical requirements.

Courses	Video Instructor-Led Learning	Instructor-Led Training	e-Learning	Course Objectives	Levels
EMC Storage and Information Infrastructure Expert Exam for Technology Architects (E20-805)					EXPERT
Advanced Topics in EMC Storage and Information Infrastructure Business Value Analysis, Tiered Storage Solutions, Information Protection Solutions, Virtualization Solutions, IT Service Management with EMC Ionix and Supporting Technologies, Customer Environments		4 Days		• Play the role of a "trusted advisor" to the customer in the design, deployment and management of Storage Information Infrastructure solutions • Evaluate various technical options for solution design, recommend best practices in the implementation and use of appropriate EMC technology	
Technology Architect Solutions Design Exam (E20-322)					SPECIALIST
Solutions Design Concepts ValuePak V4 Compilation of e-Learning courses: critical information for the gathering, analysis, and design of specific information storage and management technologies **(see below for specific technology segments)**			21 Hours	• Describe and interpret the important technical data to be gathered about a customer's use of information storage and management technologies • Discuss the best practices for configuring and deploying information storage and management technologies	
EMC Storage and Information Infrastructure Exam for Technology Architects (E20-500)					
EMC Storage and Information Infrastructure - Part 2 Information Protection Products: Avamar, Networker, EMC Disk Library, Data Protection Advisor, Virtualization Products: VMware, FVA, Invista, Management and Security Products: EMC ControlCenter, EMC Smarts, VoyenceControl, InfraEnterprise, RSA envision, RSA Data Loss Prevention		3 Days		• Position the architecture, theory of operations and capabilities of these core EMC products to include hardware, software and management tools • Recommend an optimal EMC solution in response to a specific set of technical requirements for these products	
EMC Storage and Information Infrastructure - Part 1 Tiered Storage Products: CLARiiON, SnapView, MirrorView, Symmetrix, TimeFinder, SRDF, Connectrix, PowerPath, Celerra, FMA, Centera, Replication Products: RecoverPoint, SAN Copy, Open Replicator, Replication Manager		5 Days		• Position the architecture, theory of operations and capabilities of these core EMC products to include hardware, software and management tools • Recommend an optimal EMC solution in response to a specific set of technical requirements for these products	
Strategies Underpinning EMC Storage and Information Infrastructure Information lifecycle management, EMC Security Strategy: Securing the Information Infrastructure			3 Hours	• Explain the importance and the benefits of information lifecycle management (ILM) and information-centric security • Describe the options for delivering ILM and information-centric security via storage and information infrastructure	
Information Storage and Management Exam (E20-001)					ASSOCIATE

Information Storage and Management (5 days) OR (20 hours) (4 e-Learning modules)

Information Storage and Management (ISM) is the only course of its kind to fill the knowledge gap in understanding varied components of modern information storage infrastructure. It provides a strong understanding of information storage technologies which prepares you to learn advanced concepts, technologies and also enable you to make more informed decisions in an increasingly complex IT environment. You will learn about the architectures, features, and benefits of Intelligent Storage Systems; storage networking technologies such as FC-SAN, NAS, and IP-SAN; long-term archiving solution – CAS; business continuity solutions such as backup and replication, the increasingly critical area of information security, and the emerging field of storage virtualization including storage resource management. The technologies described in the course are illustrated and reinforced with EMC product examples. Realistic case studies enable the participant to design the most appropriate solution for given sets of criteria.

ValuePaks

Purchase Options

EMCTA-ESI2 Enterprise Self-Paced PARTNERS ONLY*
CE-VALTASIIE $1,200

*Contains associate level, as well as one Video-ILT, fifteen self-paced e-Learning courses and three Proven Professional Exam vouchers. Pricing shown reflects partner discount.

EMCTA-ESI2 Enterprise Instructor-Led PARTNERS ONLY*
CE-ILTASIIE $4,000
* Available February 14, 2011. Contains associate level, as well as two Instructor-Led, fifteen self-paced e-Learning courses and three Proven Professional Exam vouchers. Pricing shown reflects partner discount.

Solutions Design Concepts ValuePak V4

This suite of e-Learning modules supports the E20-322 Technology Architect Solutions Design Exam, an option at the Specialist level for all Technology Architect specialties.

- Backup and Recovery Solutions Design Concepts V4
- CLARiiON Solutions Design Concepts V4
- Data Archiving Solutions Design Concepts V4
- Data Migration Solutions Design Concepts V4
- Information Security Solutions Design Concepts V4
- Microsoft Exchange and SQL Server Solutions Design Concepts V4
- NAS Solutions Design Concepts V4
- Oracle Solutions Design Concepts V4
- SAN Solutions Design Concepts V4 - Part 1
- SAN Solutions Design Concepts V4 - Part 2
- Storage Management Solutions Design Concepts V4
- Symmetrix Solutions Design Concepts V4
- Virtualization Solutions Design Concepts V4 - Part 1
- Virtualization Solutions Design Concepts V4 - Part 2

EMC Commercial Storage and Information Infrastructure
Technology Architect

This curriculum enables you to have in-depth conversations with customers about core EMC technologies and products aligned to the Commercial market and EMC information management strategy. You will learn how to position core EMC product and technologies correctly; Identify and discuss key decision criteria and trade-offs among EMC solutions; and recommend optimal choices of core EMC technologies and products to meet a specific set of business and technical requirements.

Courses	Video Instructor-Led Learning	Instructor-Led Training	e-Learning	Course Objectives	Levels
EMC Storage and Information Infrastructure Expert Exam for Technology Architects (E20-805)					EXPERT
Advanced Topics in EMC Storage and Information Infrastructure Business Value Analysis, Tiered Storage Solutions, Information Protection Solutions, Virtualization Solutions, IT Service Management with EMC Ionix and Supporting Technologies, Customer Environments		4 Days		• Play the role of a "trusted advisor" to the customer in the design, deployment and management of Storage Information Infrastructure solutions • Evaluate various technical options for solution design, recommend best practices in the implementation and use of appropriate EMC technology	
Technology Architect Solutions Design Exam (E20-322)					SPECIALIST
Solutions Design Concepts ValuePak V4 Compilation of e-Learning courses: critical information for the gathering, analysis, and design of specific information storage and management technologies **(see below for specific technology segments)**			21 Hours	• Describe and interpret the important technical data to be gathered about a customer's use of information storage and management technologies • Discuss the best practices for configuring and deploying information storage and management technologies	
EMC Commercial Storage and Information Infrastructure Exam for Technology Architects (E20-501)					
EMC Commercial Storage and Information Infrastructure Tiered Storage Products, CLARiiON, SnapView, MirrorView, Connectrix, PowerPath, Celerra, Centera, Replication Products:, RecoverPoint, SAN Copy, Replication Manager, Information Protection Products:, Avamar, Networker, EMC Disk Library, Virtualization Products, VMware		5 Days		• Position the architecture, theory of operations and capabilities of core EMC commercial market products to include hardware, software and management tools • Recommend an optimal EMC solution in response to a specific set of technical requirements for these products	
Information Storage and Management Exam (E20-001)					ASSOCIATE

ValuePaks

Information Storage and Management (5 days) OR (20 hours) (4 e-Learning modules)

Information Storage and Management (ISM) is the only course of its kind to fill the knowledge gap in understanding varied components of modern information storage infrastructure. It provides a strong understanding of information storage technologies which prepares you to learn advanced concepts, technologies and also enable you to make more informed decisions in an increasingly complex IT environment. You will learn about the architectures, features, and benefits of Intelligent Storage Systems; storage networking technologies such as FC-SAN, NAS, and IP-SAN; long-term archiving solution – CAS; business continuity solutions such as backup and replication, the increasingly critical area of information security, and the emerging field of storage virtualization including storage resource management. The technologies described in the course are illustrated and reinforced with EMC product examples. Realistic case studies enable the participant to design the most appropriate solution for given sets of criteria.

Purchase Options

EMCTA-ESI2 Commercial Self-Paced PARTNERS ONLY*
CE-VALTASIIC $1,200

*Contains associate level, as well as one Video-ILT, fourteen self-paced e-Learning courses and three Proven Professional Exam vouchers. Pricing shown reflects partner discount

EMCTA-ESI2 Commercial Instructor-Led PARTNERS ONLY*
CE-ILTASIIC $4,000

* Available February 14, 2011. Contains associate level, as well as one Instructor-Led, fourteen self-paced e-Learning courses and three Proven Professional Exam vouchers. Pricing shown reflects partner discount.

Solutions Design Concepts ValuePak V4

This suite of e-Learning modules supports the E20-322 Technology Architect Solutions Design Exam, an option at the Specialist level for all Technology Architect specialties.

- Backup and Recovery Solutions Design Concepts V4
- CLARiiON Solutions Design Concepts V4
- Data Archiving Solutions Design Concepts V4
- Data Migration Solutions Design Concepts V4
- Information Security Solutions Design Concepts V4
- Microsoft Exchange and SQL Server Solutions Design Concepts V4
- NAS Solutions Design Concepts V4
- Oracle Solutions Design Concepts V4
- SAN Solutions Design Concepts V4 - Part 1
- SAN Solutions Design Concepts V4 - Part 2
- Storage Management Solutions Design Concepts V4
- Symmetrix Solutions Design Concepts V4
- Virtualization Solutions Design Concepts V4 - Part 1
- Virtualization Solutions Design Concepts V4 - Part 2

Celerra Learning Path
Platform Engineer

For Velocity² CS Partners who maintain and support EMC NAS solutions. This certification aligned curriculum offers knowledge, Lab experiences, and formal recognition required for a credible support engineer to troubleshoot and help resolve EMC Celerra network-attached storage related issues.

ValuePaks	Courses	Instructor-Led Training	e-Learning	Course Objectives	Levels
	Celerra Specialist Exam for Platform Engineers (E20-661)				SPECIALIST
	Celerra NS Series Installation and Maintenance Product Installation and Configuration Overview, Celerra Documentation and Tools, Preparing, Installing, and Configuring NS Gateway Systems, Celerra ConnectHome, Create User LUNs and Initial Celerra Configuration, Data Mover Upgrades, NAS CCA, Celerra NS Series Linux/UNIX Skills, Overview of EMC NAS Software, Preparing and Executing Software Upgrade Procedures, Standby Control Station Overview, Preparing and Performing CS Replacements, Installing and Configuring a Celerra NS Integrated System, NS System Field Replaceable Units, Installing and Configuring a Celerra NS Integrated System, Celerra NS Series Troubleshooting	5 Days		• Identify and use the tools needed to successfully perform an NS Series installation • Perform the key procedures common to any NS Series installation • Install and configure a fabric-connected gateway • Perform an EMC NAS code upgrade to an NS system • Troubleshoot common installation and upgrade issues • Perform an NS system upgrade by adding a Data Mover • Perform FRU replacement activities on NS systems • Develop basic UNIX/Linux skills for Control Station CLI operations	
	Celerra Unified QuickStart: Basic Maintenance and Storage Provisioning Identify CRU and FRU Replacement Procedures, Implementation using the Navisphere Service Taskbar		1 Hour	• Download, Install and implement the Navisphere Service Taskbar (NST) • Add storage to the CLARiiON • Run Disk Replacement utility	
	Celerra Unified QuickStart: Basic Management Overview Celerra Manager Basics, CLARiiON Management Basics		2 Hours	• Describe the purpose of the management utilities • Access and navigate the management utilities • List the requirements of the management utilities	
	Celerra Unified QuickStart: Provisioning for FC-connected hosts Fibre Channel Basics Overview, FC Host Connectivity to Unified Storage Platforms, Provisioning Storage for FC-connected Hosts, Host Access to Provisioned Storage		1 Hour	• Describe basic SAN connectivity elements • Attach additional hosts to FC enabled Unified Storage platforms • Provision storage for non-Celerra hosts using management tools	
	Celerra Unified QuickStart: Basic Implementation using Provisioning Wizards Provision Storage, Create CIFS Shares, Create NFS Exports, Create iSCSI LUNs, Test and Failback Blade Failover, Basic Troubleshooting		2 Hours	• Use CSA with Provisioning Wizard to configure network devices, CIFS Shares, NFS Exports, and iSCSI LUNs • Test access, including after failover • Perform basic troubleshooting related to CSA tasks	
	Celerra Unified QuickStart: Initial Initialization and Configuration using CSA Pre-installation Tasks, Initializing the Celerra		2 Hours	• Perform pre-installation tasks for the Celerra • Explain the installation process and tools • Use Celerra Startup Assistant (CSA) to install, configure, and register	
	Celerra Unified QuickStart:NX4 Hardware Overview & Installation Hardware and Features, Supported Configurations and Upgrades, Unpacking and Cabling		1 Hour	• Describe NX4 supported configurations • Explain the ease-of-use setup features for the NX4 models • Identify the Celerra NX4 hardware upgrades	
	Celerra Unified QuickStart: NS-480 Hardware Overview and Installation Hardware and Features, Supported Configurations and Upgrades, Unpacking and Cabling		2 Hours	• Describe NS-480 supported configurations • Explain the ease-of-use setup features for the NS-480 models • Identify the NS-480 hardware upgrades	
	Celerra Unified QuickStart:NS-120 Hardware Overview & Installation Hardware and Features, Supported Configurations and Upgrades, Unpacking and Cabling		2 Hours	• Describe NS-120 supported configurations • Explain the ease-of-use setup features for the NS-120 models • Identify NS-120 hardware upgrades	
	Celerra Unified QuickStart: Product Installation and Configuration Overview Concepts of the Celerra Network Server, Unified Storage Installation Overview, Celerra Management Options		1 Hour	• Product options (Unified, Gateway, etc) • User interface options for managing Unified Celerra • Key tasks for installation	
	Celerra Foundations Celerra Architecture, Theory of Operations, Features and Functions, Business Continuity and Backup Solutions, Platforms, Benefits and Requirements		2 Hours	• Describe Celerra features, functions, and Management software offerings • Different Celerra Business Continuity options and Backup solutions	
	Information Storage and Management Exam (E20-001)				ASSOCIATE

Information Storage and Management (5 days) OR (20 hours) (4 e-Learning modules)

Information Storage and Management (ISM) is the only course of its kind to fill the knowledge gap in understanding varied components of modern information storage infrastructure. It provides a strong understanding of information storage technologies which prepares you to learn advanced concepts, technologies and also enable you to make more informed decisions in an increasingly complex IT environment. You will learn about the architectures, features, and benefits of Intelligent Storage Systems; storage networking technologies such as FC-SAN, NAS, and IP-SAN; long-term archiving solution – CAS; business continuity solutions such as backup and replication, the increasingly critical area of information security, and the emerging field of storage virtualization including storage resource management. The technologies described in the course are illustrated and reinforced with EMC product examples. Realistic case studies enable the participant to design the most appropriate solution for given sets of criteria.

Purchase Options

NAS PE ValuePak*
CE-VALCE-NS $4,000

*Contains associate level, as well as one Instructor-Led, ten self-paced e-Learning courses and three Proven Professional Exam vouchers. Pricing shown reflects partner discount.

EMC Centera Learning Path
Platform Engineer

For Velocity² CS Partners who maintain and support EMC CAS solutions. This certification-aligned curriculum offers knowledge, Lab experiences, and formal recognition required for a credible support engineer to troubleshoot and help resolve EMC Centera content- addressed storage related issues.

Courses	Video Instructor-Led Learning	Instructor-Led Training	e-Learning	Course Objectives	Levels
EMC Centera Specialist Exam for Platform Engineers (E20-670)					SPECIALIST
Centera Installation and Maintenance Centera review, WEB and software, Centera hardware, Centera initialization, CLI and Centera viewer, verify installation, management roles and configuration options, ConnectEMC, virtual pools and profiles, replication and restore, compliance, upgrades and replacements, Multi-Cabinet installation, ESRS – EMC Secure Remote Support		5 Days		• Identify major Centera hardware and software components • Install and configure Centera • Use appropriate Centera WEB sites to retrieve Centera software, documentation, procedures, and other related materials • Interpret CCRF, then generate the appropriate procedures to install Centera into customer network • Use Centera Viewer, CLI, Centera Verify and other Centera tools • Configure optional features such as CPP/CPM, Replication, Pools & Profiles, and ConnectEMC • Perform upgrades and replacements	
Centera Universal Access Introduction to EMC Centera Universal Access (CUA), CUA software installation process for a EMC Centera node and Dell PowerEdge 2650/2850, How the CUA works, Additional features and configurations available for CUA, Monitoring and managing a CUA, How to configure and use the EMC Centera File Archiver			2 Hours	• Explain EMC Centera Universal Access (CUA) theory of operations and describe the installation and configuration process • Define the tools available to monitor and manage CUA	
Centera Architectural Overview Identify the hardware and software components of a EMC Centera, Define the tools available to manage the EMC Centera, Describe EMC Centera configurations and their functions			2 Hours	• Identify the hardware and software components and explain the architecture of the EMC Centera platform • Describe various EMC Centera configurations and the available tools for management	
Basic Network Environment ARPA Network Architecture, Network and Transport Layers, Application Layer and Troubleshooting			5 Hours	• Describe the components of a typical network infrastructure • Identify basic network concepts that will help in configuring and managing EMC products	
Information Storage and Management Exam (E20-001)					ASSOCIATE
Information Storage and Management (5 days) OR (20 hours) (4 e-Learning modules) Information Storage and Management (ISM) is the only course of its kind to fill the knowledge gap in understanding varied components of modern information storage infrastructure. It provides a strong understanding of information storage technologies which prepares you to learn advanced concepts, technologies and also enable you to make more informed decisions in an increasingly complex IT environment. You will learn about the architectures, features, and benefits of Intelligent Storage Systems; storage networking technologies such as FC-SAN, NAS, and IP-SAN; long-term archiving solution – CAS; business continuity solutions such as backup and replication, the increasingly critical area of information security, and the emerging field of storage virtualization including storage resource management. The technologies described in the course are illustrated and reinforced with EMC product examples. Realistic case studies enable the participant to design the most appropriate solution for given sets of criteria.					

Purchase Options

Networked Storage CAS PE ValuePak *
CE-VALCE-CAS $5,000
Contains associate level, as well as one Instructor-Led, three self-paced e-Learning courses and three Proven Professional Exam vouchers. Pricing shown reflects partner discount.

Symmetrix Learning Path
Platform Engineer

For storage professionals who want to increase their knowledge about concepts of disk array storage, and the Symmetrix Series. Articulate features and functions of various hardware models, understand architecture and theory of operations, and demonstrate management and administrative capabilities using SymmWin GUI and Inlines Commands .

Courses	Instructor-Led Training	Online ILT	e-Learning	Course Objectives	Levels
Symmetrix Specialist Exam for Platform Engineers (E20-616)					SPECIALIST
Symmetrix Configuration with SymmWin Introduction to SymmWin, Creating a OS configuration, Creating a MF and SRDF configuration, Special configurations and best practices		3 Days		• Configure a Symmetrix DMX and V-Max system using SymmWin for various host environments • Produce a SymmWin configuration report using the SymmWin tools • Obtain configuration information from the Symmetrix Configuration Web site and PowerLink and eLab-Navigator	
Symmetrix Installation and Maintenance Overview DMX-3&4 and V-Max, Storage Bay DMX-3&4 and V-MAX, System Bay DMX-3&4 and V-Max, FRUs DMX-3&4, FRUs V-Max, Tools, Inlines, Power, Vault, Symmwin	5 Days			• Identify and locate the main components of the V-Max, DMX-3 & 4 • Describe the available drive bay configurations • Cable the V-Max, DMX-3 & 4 for drives, power and communication • Perform cable diagnostics • Describe XCM functionality • Describe Vaulting concepts • Perform a non-disruptive replacement for field replaceable units • Use SymmWin features and functionality introduced with 5773 and 5874 Enginuity	
Symmetrix Hardware Symmetrix DMX, Symmetrix V-Max			2 Hours	• Describe the main components of the Symmetrix DMX 3- 4 storage bay • Describe the available Symmetrix DMX 3-4 configurations • Describe the main components of the V-Max storage bay • Describe the available Symmetrix V-Max configurations	
SRDF Foundations Features, architecture, theory of operations and benefits of the SRDF family of Symmetrix remote replication solutions			2 Hours	• Describe architectural components and theory of operations of SRDF • Explain how various replication options of SRDF can be integrated into Symmetrix DMX business continuity/disaster recovery environment	
TimeFinder Foundations Features, architecture, theory of operations, and benefits of the TimeFinder family of Symmetrix local replication solutions			2 Hours	• Describe the architectural components and theory of operations of TimeFinder • Explain how various replication options of TimeFinder can be integrated into Symmetrix DMX business continuity/disaster recovery environment	
Symmetrix Foundations Symmetrix disk array architecture, volume protection, I/O path, connectivity , vaulting and high availability features			2 Hours	• Draw and describe the basic architecture of Symmetrix DMX and V-Max • Theory of operations, connectivity options, and key features	
Information Storage and Management Exam (E20-001)					ASSOCIATE

Information Storage and Management (5 days) OR (20 hours) (4 e-Learning modules)
Information Storage and Management (ISM) is the only course of its kind to fill the knowledge gap in understanding varied components of modern information storage infrastructure. It provides a strong understanding of information storage technologies which prepares you to learn advanced concepts, technologies and also enable you to make more informed decisions in an increasingly complex IT environment. You will learn about the architectures, features, and benefits of Intelligent Storage Systems; storage networking technologies such as FC-SAN, NAS, and IP-SAN; long-term archiving solution – CAS; business continuity solutions such as backup and replication, the increasingly critical area of information security, and the emerging field of storage virtualization including storage resource management. The technologies described in the course are illustrated and reinforced with EMC product examples. Realistic case studies enable the participant to design the most appropriate solution for given sets of criteria.

Purchase Options

Partner Subscription
CE-SUBPNR01 $8,500

For details on purchase options see page 77.

CLARiiON Learning Path
Platform Engineer

For Velocity² CS Partners who maintain and support EMC CLARiiON SAN solutions. This certification aligned curriculum offers knowledge, Lab experiences, and formal recognition required for a support engineer to install, configure, maintain, troubleshoot and help resolve EMC CLARiiON SAN related issues.

ValuePaks	Courses	Video Instructor-Led Learning	Instructor-Led Training	e-Learning	Course Objectives	Levels
	CLARiiON Specialist Exam for Platform Engineers (E20-611)					SPECIALIST
	CLARiiON CX3 Installation Differences Port configurations, Navisphere Storage Initialization Wizard, Navisphere Service Taskbar			2 Hours	• Identify different port configurations between the CX3 and CX4 series arrays • Identify differences in the Navisphere Storage Initialization Wizard • Identify differences in the Navisphere Service Taskbar • Identify Service Port connections	
	CLARiiON CX4 Series Installation and Maintenance CX4 Series Hardware, Installing a CX4 Series Array, CX4 Series Basic Troubleshooting, Data Protection, CLARalert		5 Days		• Install a CX4 series array •Upgrade array software •Identify and replace faulted CX4 series components	
	CLARiiON Basic Management Navisphere Manager and CLI, basic management functions, CLARiiON storage platform			2 Hours	• Describe the utilities used to manage CLARiiON arrays and the Navisphere Manager GUI • Create and manage storage objects with Navisphere Manager	
	CLARiiON CX3 Series Hardware CLARiiON CX3 Series Hardware Components, Host Connectivity, Management Topology, CLARiiON CX3-10c Overview			2 Hours	• Describe the common features of the CX3 series storage systems • Describe the basic differences between the CX3 series storage systems and existing CLARiiONs • Describe the basic differences between the CX3-20/CX30-40 and the "c" and "f" version of those models	
	CLARiiON Hardware CX4 Architecture and Features, DAE3P Features and Rules, CX4-120, CX4-240, CX4-480 and CX4-960 Architecture, Enterprise Flash Drives			2 Hours	• Describe CLARiiON CX4 Architecture and Features and CX4 Cabling • Describe CLARiiON CX4-120, 240, 480, 960 Specifications • Discuss Enterprise Flash Directors	
	CLARiiON Foundations CLARiiON models and components, management options, features			2 Hours	• Identify supported CLARiiON RAID Types • Identify CLARiiON data integrity and availability features • Identify CLARiiON management options and storage provisioning objectss	
	Information Storage and Management Exam (E20-001)					ASSOCIATE

Information Storage and Management (5 days) OR (20 hours) (4 e-Learning modules)

Information Storage and Management (ISM) is the only course of its kind to fill the knowledge gap in understanding varied components of modern information storage infrastructure. It provides a strong understanding of information storage technologies which prepares you to learn advanced concepts, technologies and also enable you to make more informed decisions in an increasingly complex IT environment. You will learn about the architectures, features, and benefits of Intelligent Storage Systems; storage networking technologies such as FC-SAN, NAS, and IP-SAN; long-term archiving solution – CAS; business continuity solutions such as backup and replication, the increasingly critical area of information security, and the emerging field of storage virtualization including storage resource management. The technologies described in the course are illustrated and reinforced with EMC product examples. Realistic case studies enable the participant to design the most appropriate solution for given sets of criteria.

Purchase Options

CLARiiON Solutions PE ValuePak*

CE-VALCE-CLN $4,000

Contains associate level, as well as one Instructor-Led, five self-paced e-Learning courses and three Proven Professional Exam vouchers. Pricing shown reflects partner discount.

Backup and Recovery-Avamar Implementation Engineer

For Partners who implement EMC Avamar solutions, this curriculum offers knowledge and Lab experiences required for credible storage professionals to install and configure EMC Avamar data-deduplication technology.

ValuePaks

Courses	Instructor-Led Training	Online ILT	e-Learning	Course Objectives
Backup and Recovery - Avamar Specialist Exam for Implementation Engineers (E20-594)				
EMC Avamar Data Store Hardware Installation Introduction to Avamar and Avamar Data Store, Avamar Data Store Hardware Installation, Avamar Data Store Post Installation			2 Hours	• Describe the Avamar Data Store (ADS) solution and hardware components • Explain the steps in the Avamar Data Store hardware installation process • Describe how to connect the Avamar Data Store to the customer network • Describe CSI IB Registration and other post-installation tasks
EMC Avamar Virtual Edition Overview EMC Avamar Fundamentals, EMC Avamar Editions, EMC Avamar Virtual Edition Installation			1 Hour	• Discuss EMC Avamar Server Configurations • Describe ECM Avamar Virtual Edition Solution Installation • Discuss differences between EMC Avamar Virtual Edition and Data Store Edition
EMC Avamar Administration, Installation and Configuration EMC Avamar functionality, Avamar—Installation, Avamar—Backups, Avamar— Recovery, Avamar—Node Failure Simulation, Avamar—Node addition, Avamar Fundamentals, Avamar Administration, Avamar Snapups, Avamar Restores, System Monitoring and Maintenance, Replication, Troubleshooting and Reporting	5 Days	5 Days		• Install and configure Avamar software (RAIN and NON-RAIN configurations) • Validate installation of Avamar software by performing on-demand and scheduled backups and recoveries • Simulate node failure and perform node replacement • Define Avamar terminology, system architecture, components, processes, and major cycles in the snapup process • Install Avamar Administrator and Client software • Run on-demand snapups from the Avamar Administrator and the Avamar Client interfaces • Restore files using Avamar Administrator and Avamar Web Restore interfaces • Describe Avamar daily maintenance activities: checkpoints, HFS checks, and garbage collection
EMC Avamar Overview Avamar Fundamentals, Avamar Snapups and Restores, Maintaining, Monitoring and Reporting			2 Hours	• Describe Avamar features and architecture • Describe the Avamar backup and restore process • Explain how to perform snapups and restores • Describe Avamar maintenance activities • Describe Avamar monitoring and reporting capabilities
Information Storage and Management Exam (E20-001)				
Information Storage and Management (5 days) OR (20 hours) (4 e-Learning modules) Information Storage and Management (ISM) is the only course of its kind to fill the knowledge gap in understanding varied components of modern information storage infrastructure. It provides a strong understanding of information storage technologies which prepares you to learn advanced concepts, technologies and also enable you to make more informed decisions in an increasingly complex IT environment. You will learn about the architectures, features, and benefits of Intelligent Storage Systems; storage networking technologies such as FC-SAN, NAS, and IP-SAN; long-term archiving solution – CAS; business continuity solutions such as backup and replication, the increasingly critical area of information security, and the emerging field of storage virtualization including storage resource management. The technologies described in the course are illustrated and reinforced with EMC product examples. Realistic case studies enable the participant to design the most appropriate solution for given sets of criteria.				

ValuePak

Information Storage and Management

SPECIALIST

ASSOCIATE

Purchase Options (Velocity Service Partners Only)

EMCIE-BR Avamar Instructor-Led PARTNERS ONLY*
CE-AVAXIADV $2,500
*Contains one Instructor-Led or Online-ILT, three self-paced e-Learning courses and one Proven Professional Exam voucher. Pricing shown reflects partner discount.

Additional Training

Avamar Solution Design - Online ILT
Online-ILT 20 TU 2 Days

This course provides participants with the knowledge necessary for designing backup solutions using EMC Avamar. The course explores design considerations and recommended Avamar architecture best practices.

Avamar Data Transport Management
e-Learning 2 TU 1 Hour

This course provides participants with an overview of Avamar Data Transport and its management. The course describes ADT processes, operations, ad design practices. It also describes how to perform common ADT tasks such as transports and restores.

EMC Avamar Integration and Performance Management
ILT 30 TU 3 Days

This course provides participants with the knowledge necessary to expand their Avamar installation and performance management skills. The course explores installation and performance management procedures and best practices. Hands on experience in integrating Avamar with various applications and with EMC NetWorker is provided through a lab environment.

Backup and Recovery-NetWorker Implementation Engineer

For any EMC Velocity Service Partners who implement Backup and Recovery solutions into Windows and/or UNIX environments. You will learn to install, configure, and deploy EMC NetWorker Product Family as part of your company's professional services offering.

ValuePaks

Courses	Video Instructor-Led Learning	Instructor-Led Training	e-Learning	Course Objectives	Levels
Backup and Recovery - NetWorker Specialist Exam for Implementation Engineers (E20-593)					SPECIALIST
EMC NetWorker Administration for UNIX and Microsoft Windows EMC NetWorker 7.x installation, configuration, maintenance, management, backup, recovery, autochanger configuration and management, save set cloning and staging, generate reports		5 Days		• Install and administer NetWorker and NetWorker Management Console • Perform and customize backups • Manage standalone devices, autochangers, databases, and media • Recover client data and a NetWorker server	
NetWorker Architecture NetWorker environment and advantages, NetWorker components and daemons, NetWorker data formats and device operations, NetWorker backup and recovery operations			1 Hour	• Describe the EMC NetWorker architecture and components • Describe NetWorker data formats and volume operations • Describe NetWorker process and data flow during backup and recovery operations	
EMC NetWorker Integration with Backup-to-Disk Technologies Overview, NetWorker and backup-to-disk, configuration			2 Hours	• List the requirements for a successful backup-to-disk integration • State the differences between NetWorker's "file type device" and "advance file type device" • Configure disk backup using EMC NetWorker	
EMC NetWorker Modules Overview NetWorker modules (Database, E-mail, Enterprise Applications, SnapShot)			2 Hours	• Describe the EMC NetWorker Module solution and list the advantages • Explain NetWorker Module architecture and describe the functionality of each of the modules	
EMC NetWorker Foundations NetWorker architecture, features, and functionality			2 Hours	• Describe the EMC NetWorker solution, its advantages, and the NetWorker hosts and their roles • Explain NetWorker backup and recovery processes and types	
Information Storage and Management Exam (E20-001)					ASSOCIATE

Information Storage and Management (5 days) OR (20 hours) (4 e-Learning modules)

Information Storage and Management (ISM) is the only course of its kind to fill the knowledge gap in understanding varied components of modern information storage infrastructure. It provides a strong understanding of information storage technologies which prepares you to learn advanced concepts, technologies and also enable you to make more informed decisions in an increasingly complex IT environment. You will learn about the architectures, features, and benefits of Intelligent Storage Systems; storage networking technologies such as FC-SAN, NAS, and IP-SAN; long-term archiving solution – CAS; business continuity solutions such as backup and replication, the increasingly critical area of information security, and the emerging field of storage virtualization including storage resource management. The technologies described in the course are illustrated and reinforced with EMC product examples. Realistic case studies enable the participant to design the most appropriate solution for given sets of criteria.

Purchase Options (Velocity Service Partners Only)

EMCIE-BR NetWorker Instructor-Led PARTNERS ONLY*
CE-VALIE-BR $2,500
*Contains associate level, as well as one Instructor-Led, four self-paced e-Learning courses and three Proven Professional Exam vouchers. Pricing shown reflects partner discount.

EMCIE-BR NetWorker Self-Paced PARTNERS ONLY*
CE-SPIE-BR $1,200
* Available February 14, 2011. Contains associate level, as well as one Video-ILT, four self-paced e-Learning courses and three Proven Professional Exam voucher. Pricing shown reflects partner discount.

Expert Level Knowledge

EMC NetWorker PowerSnap Installation and Configuration
20 TU ILT 2 Days
In this course, participants learn to install and configure EMC NetWorker PowerSnap software to perform and backup Snapshots using EMC Symmetrix TimeFinder and EMC CLARiiON SnapView solutions.

Data Protection Advisor Implementation and Management
30 TU Online ILT 3 Days
This Online ILT course covers implementation and management tasks related to the Data Protection Advisor product. Learners will be presented to the procedures of installing the different DPA components (server and collectors) on different platforms using different database types.

EMC NetWorker Module for Oracle Implementation and Configuration
20 TU Online ILT 2 Days
This Online ILT course focuses on how EMC NetWorker Module for Oracle works in conjunction with Oracle and EMC NetWorker to provide a comprehensive Oracle data storage management system. The concepts covered include installing, configuring and troubleshooting NetWorker Module for Oracle. The course contains lectures, hands-on lab exercises and review questions. Lab exercises will be performed on Solaris 10 operating system with Oracle10gR2 and EMC NetWorker v7.4.

EMC NetWorker Module for Microsoft Applications
20 TU Online ILT 2 Days
This introductory course provides an overview of features and functionality introduced with the EMC NetWorker Module for Microsoft Applications. Prior knowledge of EMC NetWorker software is a prerequisite as this course only focuses on the NetWorker Module for Microsoft Applications.

EMC NetWorker Module for Databases and Applications
30 TU Online ILT 3 Days
This introductory course provides an overview of features and functionality introduced with the EMC NetWorker Module for Databases and Applications release 1.0. Prior knowledge of EMC NetWorker software is a prerequisite as this course only focuses on the NetWorker Module for Databases and Applications.

Backing Up and Recovering Clusters with EMC NetWorker
2 TU e-Learning 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.

Configuring EMC NetWorker in a Firewall Environment
2 TU e-Learning 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.

EMC NetWorker Module for Exchange Server
2 TU e-Learning 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
2 TU e-Learning 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
2 TU e-Learning 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.

EMC NetWorker PowerSnap Overview
2 TU e-Learning 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.

EMC NetWorker De-Duplication
2 TU e-Learning 2 Hours
This course provides participants with the knowledge necessary to configure and manage NetWorker de-duplication backups.

Implementing EMC License Manager
2 TU e-Learning 1 Hour
This course provides participants with the knowledge and skills necessary to use the EMC Legato License Manager (LLM) to manage EMC NetWorker licenses across an enterprise.

Network-Attached Storage (NAS)—Learning Path

Implementation Engineer

For any Velocity Service Partners who implements, configures, and troubleshoots an EMC network-attached storage solution using Celerra, the Implementation Engineer Network Storage curriculum elevates your knowledge and skills to implement, configure, and perform administrative operations in a Celerra environment using lectures, instructor demonstrations, and hands-on Labs.

ValuePaks

Courses	Video Instructor-Led Learning	Instructor-Led Training	e-Learning	Course Objectives
Network Attached Storage (NAS) Specialist Exam for Implementation Engineers (E20-361)				
Celerra AntiVirus Agent What is a virus and how it infects a system, CAVA's components, features, tools and utilities			1 Hour	• Describe the Celerra AntiVirus Agent purpose, functionality and methodology • Describe the CAVA components and concepts, tools and utilities
NAS Backup Concepts Backup Terminology, Tape as a Backup Medium, Backup Evolution, Network Data Management Protocol (NDMP) synopsis			2 Hours	• Describe the backup process using industry recognized terminology • List the various challenges faced in the Industry surrounding backups • Define the various methodologies of performing backup • Explain the role of Network Data Management Protocol (NDMP)
NAS Operations and Management with Celerra Overview, Unisphere, Data Mover Failover, Basic Network Config, Configuring File Systems, Exporting File Systems to UNIX, Usermapper, Configuring CIFS, Virtual Data Movers, Managing Permissions on CIFS only Environment, Authentication, File Systems Quotas, CIFS Features, Networking Features, Celerra and ISCSI, Snapsure, Celerra Replicator, Celerra CLI		5 Days		• Implement Data Mover failover • Implement Basic network configurations • Configure and manage Celerra file systems • Export Celerra file systems for NFS and CIFS access • Implement Virtual Data Movers • Implement file system quotas on the Celerra • Implement CIFS features • Configure Celerra Networking features • Implement Celerra in an iSCSI environment • Implement SnapSure • Implement Celerra Replicator
Celerra Platforms Architectural Overview The architectural overview of the current Celerra model family, Celerra Platforms Storage Capacity, Appendix for Legacy Celerra Platforms			2 Hours	• List the main components of a Celerra • Describe basic Celerra operations • Identify component connections • List storage capacities for the Celerra Platforms
Celerra Foundations Celerra Architecture, Theory of Operations, Features and Functions, Business Continuity and Backup Solutions, Platforms, Benefits and Requirements			2 Hours	• Identify the concepts, architecture, terminology, and environmental aspects of NAS using the Celerra • Describe Celerra features, functions, and Management software offerings • Different Celerra Business Continuity options and Backup solutions
Connectrix Foundations Storage Connectivity Overview, SAN Architecture and Components, SAN Fabric Topologies, EMC's Connectrix Range, Securing a SAN, SAN Management Tools, IP Based SAN Extension, SAN Technical Positioning			1 Hour	• Components, services, and FC Protocol used in a Storage Area Network • Identify Fabric Topologies and different types of Connectrix Products • Explain how to secure a SAN using series-specific solutions
CLARiiON Foundations CLARiiON models and components, management options, features			2 Hours	• Identify supported CLARiiON RAID Types • Identify CLARiiON data integrity and availability features • Identify CLARiiON management options and storage provisioning objectss
Information Storage and Management Exam (E20-001)				

Information Storage and Management (5 days) OR (20 hours) (4 e-Learning modules)

Information Storage and Management (ISM) is the only course of its kind to fill the knowledge gap in understanding varied components of modern information storage infrastructure. It provides a strong understanding of information storage technologies which prepares you to learn advanced concepts, technologies and also enable you to make more informed decisions in an increasingly complex IT environment. You will learn about the architectures, features, and benefits of Intelligent Storage Systems; storage networking technologies such as FC-SAN, NAS, and IP-SAN; long-term archiving solution – CAS; business continuity solutions such as backup and replication, the increasingly critical area of information security, and the emerging field of storage virtualization including storage resource management. The technologies described in the course are illustrated and reinforced with EMC product examples. Realistic case studies enable the participant to design the most appropriate solution for given sets of criteria.

Levels: SPECIALIST — ASSOCIATE

ValuePaks

Purchase Options (Velocity Service Partners Only)

EMCIE-NAS Instructor-Led PARTNERS ONLY
CE-VALIE-NS $2,500
*Contains associate level, as well as one Instructor-Led, six self-paced e-Learning courses and one Proven Professional Exam voucher. Pricing shown reflects partner discount.

EMCIE-NAS Self-Paced PARTNERS ONLY
CE-SPIE-NS $1,200
* Available February 14, 2011. Contains associate level, as well as one Video-ILT, six self-paced e-Learning courses and one Proven Professional Exam voucher. Pricing shown reflects partner discount.

Expert Level Knowledge

Celerra Replicator – CIFS Disaster Recovery
50 TU ILT 5 Days

This workshop provides the opportunity to use Celerra Replicator to configure and implement a Disaster Recovery (DR) plan for a Microsoft Windows client environment. Management tasks such as replication configuration, failover and failback, access and permissions testing, and extensive file system management are covered. This course currently supports Celerra version 5.6.

NAS Performance Workshop
40 TU ILT 4 Days

The NAS Performance Workshop is an advanced level NAS course designed to provide NAS field personnel with the ability to design and implement NAS solutions with performance in mind. The student will learn to diagnose and troubleshoot NAS performance issues related to host (Celerra and client), network, storage array (CLARiiON), workload characteristics, and EMC features. This course currently supports Celerra 5.6.

Network Attached Storage (NAS) Expert Exam for Implementation Engineers

EXAM E20-860

Additional Training

VMware vSphere Integration with Celerra
50 TU ILT 5 Days

This instructor led, lab format course provides students with opportunity to acquire hands-on experience integrating EMC Celerra unified storage systems with VMware vSphere vCenter server and ESX 4.0/ESXi 4.0 servers. The course focuses on operations that IT professionals may require to perform provisioning, managing, migrating, replicating, and protecting the VMware vSphere virtual infrastructure on Celerra unified storage system. It also covers the VMware Site Recovery Manager (SRM) setup, configuration, management, and disaster recovery plan using EMC Celerra replicator technology. This course currently supports Celerra version 5.6.

NAS Symmetrix Business Continuity
30 TU ILT 3 Days

This course focuses on business continuity tools used to provide local and remote file system replication for NAS in a Symmetrix environment. It provides students lecture and hands-on instruction (40% lecture/60% lab) on the functionality and the implementation of NAS solutions using TimeFinder/FS and Symmetrix Remote Data Facility (SRDF).

Celerra Multi-Path File System Overview
2 TU e-Learning 1 Hour

This course provides the learner with an overview of the architecture and software components of a Celerra MPFS Solution. Included in this course are details on component configuration, data flow, protocols handling client-to-server communication, protocols handling data and metadata management, and possible solution scenarios and applications for Celerra MPFS.

Celerra MPFS Solution Design and Implementation Workshop
40 TU ILT 4 Days

This course provides an in-depth education of Celerra MPFS, focusing on its architecture and the types of environments and applications where it is best suited. The students will learn the steps needed to configure MPFS using the Fibre Channel and iSCSI protocols (integrated with a Cisco MDS switch and a CLARiiON combo card). This course also provides training on connecting to Windows and Linux hosts. Students are also introduced to the use of the MCM tool to analyze and configure an MPFS environment. This course is currently supports Celerra version 5.6.

Celerra NDMP Backup Solutions Workshop
40 TU ILT 4 Days

The Celerra NDMP Backup Solutions workshop is designed for customers, internal EMC Employees and partners involved with the planning, designing, deploying, and executing a Network Data Management Protocol (NDMP) backup and restore of EMC Celerra systems using EMC Networker and an EMC Disk Library (EDL) or a Celerra Virtual Tape Library (VTLU). The lecture portion of the training will address Backup concepts/backup solutions, NDMP Theory of Operation, Celerra with EMC Backup Environment, an overview of Tape Unit Configuration. Labs will reinforce the information you have been taught explaining how to install, and configure the proposed backup solution.

Celerra Gateway Install
3 TU e-Learning 1 Hour

This course focuses on the installation tasks of an EMC Celerra NS Gateway model. Pre-installation tasks, such as cabling and site preparation, as well as post installation, such as making storage available to users, are covered. The storage array that will be used in this course is the Celerra CLARiiON.

Symmetrix Solutions Implementation Engineer

For any Velocity2 Velocity Service Partners who implement Symmetrix solutions in open systems environments; including local and remote replication technologies and configuration using Solutions Enabler and Symmetrix Management Console (SMC). This certification aligned curriculum offers knowledge, Lab experiences, and formal recognition required for a credible implementation engineer to configure and deploy TimeFinder, SRDF and Open Replicator in open systems environments.

ValuePaks

Courses	Instructor-Led Training	Online ILT	Video Instructor-Led Learning	e-Learning	Course Objectives
Symmetrix Solutions Specialist Exam for Implementation Engineers (E20-335)**					
Symmetrix Business Continuity Implementation Implementation of EMC Data Migration, Symmetrix replication solutions in open systems environments				2 Hours	• Describe the Symmetrix Business Continuity Implementation process. • Identify implementation considerations for local and remote replication • List Data Migration Implementation process, options and tools
Symmetrix Business Continuity Management Symmetrix business continuity management and integration with Windows and UNIX hosts. TimeFinder local replication, SRDF two site remote replication and Open Replicator inter-array data migration and replication	5 Days	5 Days			• Use Solutions Enabler to perform TimeFinder/Clone and TimeFinder • Use Solutions Enabler to perform SRDF Synchronous and SRDF Asynchronous • Use Solutions Enabler to perform Open Replicator operations • Describe open systems host considerations for Symmetrix business continuity • Describe consistency technologies for Symmetrix business continuity • Overview of Symmetrix Management Console (SMC) for business continuity
Solutions Enabler Installation and Configuration Host Configuration, mapping, zoning and masking, environment variables, options file, daemon options file, gatekeeper management				2 Hours	• Describe Solutions Enabler installation procedure • List commonly used environment variables • Explain the use of the options file and daemon options file
Open Replicator Fundamentals Features, architecture, theory of operations and benefits of Open Replicator for Symmetrix				2 Hours	• Explain the concepts and benefits of Open Replicator • Describe the architecture, terminology and operations of Open Replicator
SRDF Foundations Features, architecture, theory of operations and benefits of the SRDF family of Symmetrix remote replication solutions				2 Hours	• Describe architectural components and theory of operations of SRD • Explain how various replication options of SRDF can be integrated into Symmetrix DMX business continuity/disaster recovery environment
TimeFinder Foundations Features, architecture, theory of operations, and benefits of the TimeFinder family of Symmetrix local replication solutions				2 Hours	• Describe the architectural components and theory of operations of TimeFinder • Explain how various replication options of TimeFinder can be integrated into Symmetrix business continuity / disaster recovery environment
Symmetrix Configuration Management Configure a Symmetrix and prepare it for host access using Solutions Enabler and SMC. Different types of devices and their functions. Creation, mapping and masking of devices. Setting Symmetrix metrics and RDF group attributes. Virtual Provisioning and Dynamic LUN migration.	4 Days	4 Days			• Perform device configuration and masking with Solutions Enabler and SMC • Configure, RDF/A group attributes and RDF related parameters • Describe parameters to enable SRDF/A, concurrent & dynamic RDF • Describe SRDF/A parameters to change priority and cache usage • Create TimeFinder/Snap virtual and save devices • Describe the benefits of virtual provisioning • Create thin and data devices. Create/Expand data device pools • List the restrictions on use of thin devices
Symmetrix Management Console (SMC) Fundamentals Documentation and Installation, SMC Interface, Configuration, Replication Operations, SMC comparison to other Symmetrix management tools, Troubleshooting				2 Hours	• Symmetrix configuration and replication operations • SMC Differences with Solutions Enabler SYMCLI
PowerPath Foundations PowerPath terminology, features, architecture, theory of operations and management				1 Hour	• Discuss the features and benefits of PowerPath in an open systems host environment • Explain how PowerPath achieves transparent recovery of host to storage channels
Connectrix Foundations Storage Connectivity Overview, SAN Architecture and Components, SAN Fabric Topologies, EMC's Connectrix Range, Securing a SAN, SAN Management Tools, IP Based SAN Extension, SAN Technical Positioning				1 Hour	• Components, services, and FC Protocol used in a Storage Area Network • Identify Fabric Topologies and different types of Connectrix Products • Explain how to secure a SAN using series-specific solutions
Symmetrix Foundations Symmetrix disk array architecture, volume protection, I/O path, connectivity , vaulting and high availability features				2 Hours	• Draw and describe the basic architecture of Symmetrix DMX and V-Max • Theory of operations, connectivity options, and key features

Levels: SPECIALIST

Information Storage and Management Exam (E20-001)

Information Storage and Management (5 days) OR (20 hours) (4 e-Learning modules)

Information Storage and Management (ISM) is the only course of its kind to fill the knowledge gap in understanding varied components of modern information storage infrastructure. It provides a strong understanding of information storage technologies which prepares you to learn advanced concepts, technologies and also enable you to make more informed decisions in an increasingly complex IT environment. You will learn about the architectures, features, and benefits of Intelligent Storage Systems; storage networking technologies such as FC-SAN, NAS, and IP-SAN; long-term archiving solution – CAS; business continuity solutions such as backup and replication, the increasingly critical area of information security, and the emerging field of storage virtualization including storage resource management. Realistic case studies enable the participant to design the most appropriate solution for given sets of criteria.

Levels: ASSOCIATE

ValuePaks

Purchase Options (Velocity Service Partners Only)

EMCIE-Symm. Solutions Instructor-Led PARTNERS ONLY*
CE-VALIE-SBC $4,000
*Contains associate level, as well as two Instructor-Led or Oniline-ILT, nine self-paced e-Learning courses and three Proven Professional Exam vouchers. Pricing shown reflects partner discount.

EMCIE-Symm. Solutions Self Paced PARTNERS ONLY*
CE-SPIE-SBC $1,200
* Available February 14, 2011. Contains associate level, as well as two Video-ILT's, nine self-paced e-Learning courses and three Proven Professional Exam vouchers. Pricing shown reflects partner discount.

Expert Level Knowledge

SRDF/Star and Cascaded SRDF - Implementation and Management
40 TU ILT 4 Days

This course describes three data center SRDF Solutions with emphasis on SRDF/Star in Open Systems environments. The content includes disk based and diskless cascaded SRDF operations. The underlying technologies, architecture and operations of SRDF/Star will be covered. Hands-on labs will teach students to bring up a working Star configuration and to recover from target and workload site faults.

SRDF/CE for Microsoft Failover Clusters - Overview
3 TU e-Learning 1 Hour

This course provides an overview of the architecture and deployment of an SRDF/CE (Cluster Enabler) solution for Microsoft Failover Clusters. Introduction to MFC and its integration with SRDF/CE is described.

Symmetrix Security Concepts
2 TU e-Learning 1.25 Hours

This course provides participants with a conceptual approach to Symmetrix storage data security and its implications in view of government regulations and possible violations due to the high degree of technology available to aid unauthorized information access.

Symmetrix - Managing Performance
3 TU e-Learning 1 Hour

This course provides an overview of the tools and options available in the Symmetrix Array and its Enginuity Operating Environment, to manage and optimize the performance of the array.

Symmetrix Performance Workshop
40 TU ILT 4 Days

This course analyzes the performance of Symmetrix DMX and V-Max-series arrays using ControlCenter Performance Manager v6.1 and Symmetrix Performance Analyzer v1.1. Through extensive discussion of Symmetrix architecture, you will learn how data is processed by each component and which workload characteristics produce the highest levels of performance.

AND ONE OF THE FOLLOWING:

Symmetrix Integration with Oracle Workshop
40 TU ILT 4 Days

Learn how to identify and create an optimal performance layout for an Oracle database application within a Symmetrix V-Max / DMX storage array infrastructure. Configure business continuity environments for the purpose of replicating an Oracle application; supporting database disaster recovery, backup and decision support situations. Discussions include Oracle integration with TimeFinder/Clone, TimeFinder/Snap, SRDF/S and SRDF/A. Consistency Technology is also discussed insuring a point-in-time Oracle environment can be replicated properly onto a target host.

OR

Symmetrix Integration with Microsoft Exchange Workshop
30 TU ILT 3 Days

This course is designed to help students understand and implement proven integration methodologies for Microsoft Exchange Server with the Symmetrix V-Max array. Students will learn how to migrate an Exchange Server from direct-attached storage to a Symmetrix V-Max array.

OR

Symmetrix Integration with SQL Server
30 TU ILT 4 Days

This course is designed to help students understand and implement proven integration methodologies for Microsoft SQL Server with the Symmetrix V-Max array. Students will learn how to migrate SQL Server databases from direct-attached storage to a Symmetrix V-Max array.

Symmetrix Solutions Expert Exam for Implementation Engineers

EXAM E20-818

Additional Training

VMware vSphere Integration with Symmetrix
50 TU ILT 5 Days

This instructor led, course provides students with opportunity to acquire hands-on experience integrating EMC Symmetrix V-MAX storage systems with VMware vSphere vCenter and ESX 4.0. The course focuses on operations that IT professionals may require to perform provisioning, managing, migrating, replicating, and protecting the VMware vSphere/Symmetrix V-MAX environment. It also covers EMC Storage Viewer, PowerPath/VE along with VMware Site Recovery Manager (SRM) using EMC SRDF technology.

Open Migrator/LM for Unix/Linux
2 TU e-Learning 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.

Open Migrator/LM for Windows Overview
2 TU e-Learning 2 Hours

This course provides the learner with an overview of online data migration using the Open Migrator (formally known as DRU) application.

Replication Manager Workshop
50 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.

SRDF/CE for MSCS Implementation and Management
30 TU ILT 4 Days

This course focuses on implementing and managing SRDF/CE (Cluster Enabler) in a MSCS (Microsoft Cluster Services) environment.

Content-Addressed Storage Learning Path

Implementation Engineer

For Velocity² Velocity Service Partners who implement EMC CAS solutions. This certification aligned curriculum offers knowledge, Lab experiences, and formal recognition required for a credible implementation engineer to configure and deploy EMC Centera content-addressed storage and incorporate virtual pools within a customer's compliance, legal discovery, or tiered storage environment.

ValuePaks

Courses	Video Instructor-Led Learning	Instructor-Led Training	Online ILT	e-Learning	Course Objectives	Levels
Content Addressed Storage (CAS) Implementation Exam (E20-370)						SPECIALIST
CAS Management EMC Centera management, day to day tasks, and basic troubleshooting steps		3 Days	3 Days		• Explain how data is stored, retrieved, and replicated on EMC Centera • Perform day-to-day management tasks on a EMC Centera using the native tools and create/test virtual pools and access profiles • Perform EMC Centera replication and basic performance and networking troubleshooting	
Centera Universal Access Introduction to EMC Centera Universal Access (CUA); CUA software installation process for an EMC Centera node and Dell PowerEdge 2650/2850; how the CUA works; additional features and configurations available for CUA; monitoring and managing a CUA; how to configure and use the EMC Centera File Archiver				2 Hours	• Explain EMC Centera Universal Access (CUA) and Describe the installation and configuration process • Define the tools available to monitor and manage the CUA	
Centera Architectural Overview Identify the hardware and software components of an EMC Centera; define the tools available to manage the EMC Centera; describe EMC Centera configurations and their functions				2 Hours	• Identify the hardware and software components of an EMC Centera • Describe EMC Centera configurations and available tools for management	
Information Storage and Management Exam (E20-001)						ASSOCIATE
Information Storage and Management (5 days) OR (20 hours) (4 e-Learning modules) Information Storage and Management (ISM) is the only course of its kind to fill the knowledge gap in understanding varied components of modern information storage infrastructure. It provides a strong understanding of information storage technologies which prepares you to learn advanced concepts, technologies and also enable you to make more informed decisions in an increasingly complex IT environment. You will learn about the architectures, features, and benefits of Intelligent Storage Systems; storage networking technologies such as FC-SAN, NAS, and IP-SAN; long-term archiving solution – CAS; business continuity solutions such as backup and replication, the increasingly critical area of information security, and the emerging field of storage virtualization including storage resource management. The technologies described in the course are illustrated and reinforced with EMC product examples. Realistic case studies enable the participant to design the most appropriate solution for given sets of criteria.						

ValuePaks

Purchase Options (Velocity Service Partners Only)

EMCIE-CAS Instructor-Led PARTNERS ONLY
CE-VALIE-CAS $4,000
*Contains associate level, as well as two Instructor-Led or Oniline-ILT, two self-paced e-Learning courses and three Proven Professional Exam vouchers. Pricing shown reflects partner discount.

EMCIE-CAS Self-Paced PARTNERS ONLY
CE-SPLIE-CAS $1,200
* Available February 14, 2011. Contains associate level, as well as one Video-ILT, two self-paced e-Learning courses and three Proven Professional Exam vouchers. Pricing shown reflects partner discount.

CLARiiON Solutions Learning Path

Implementation Engineer

For Velocity² Velocity Service Partners who implement EMC CLARiiON SAN solutions. This certification aligned curriculum offers knowledge, Lab experiences and formal recognition required for a credible implementation engineer to configure and deploy EMC CLARiiON and local and remote replication technologies within
a customer's existing SAN-based business continuity and disaster recovery environment.

ValuePaks

Courses	Video Instructor-Led Learning	Instructor-Led Training	e-Learning	Course Objectives
CLARiiON Solutions Specialist Exam for Implementation Engineers (E20-340)				
CLARiiON Host Integration and Implementation Storage System Installation, Upgrade and Host Attach, SAN Implementation and Event Monitor, SnapView Snapshots and SnapView Clones, Integration Procedures		4 Days		• Configure and cable a CLARiiON CX4 storage system using the Navisphere Suite of tools and the IIG (Interactive Installation Guide) • Perform a Unix, Linux and Windows host attach to a CLARiiON CX4 storage system, through a Storage Area Network, using zoning and LUN masking • Implement SnapView Snapshots and Clones • Perform a dual-host SAN attach, with full dual-fabric SAN implementation
Connectrix MDS-Series Switch Architecture and Management MDS configuration, basic implementation, and ongoing management interfaces, switch segmentation with VSANs and scalability with SAN extension			2.5 Hours	• Describe the various MDS Series switch models and their architectures • Identify the tools available for configuring and managing the MDS Series switches
Connectrix B Series Architecture and Management Common Switch Architecture, Model Hierarchy and Functionality, Native Switch Tools, Optional Switch Tools, Switch Security			2 Hours	• Describe the various B Series switch models and their architectures • Identify the tools available for configuring and managing the B Series switches
CLARiiON Advanced Management CLARiiON management concepts, including Access Logix, PowerPath, metaLUNs, and LUN migration architecture and management			2 Hours	• Explain Access Logix theory of operations and functionality • Describe how to manage metaLUNs and migrate LUNs
CLARiiON Basic Management Navisphere Manager and CLI, basic management functions, CLARiiON storage platform			2 Hours	• Describe the utilities used to manage CLARiiON arrays and the Manager GUI • Create and manage storage objects with Navisphere Manager
PowerPath Foundations PowerPath terminology, features, architecture, theory of operations and management			1 Hour	• Discuss the features and benefits of PowerPath in an open systems host environment • Explain how PowerPath achieves transparent recovery of host to storage channels
Connectrix Foundations Storage Connectivity Overview, SAN Architecture and Components, SAN Fabric Topologies, EMC's Connectrix Range, Securing a SAN, SAN Management Tools, IP Based SAN Extension, SAN Technical Positioning			1 Hour	• Components, services, and FC Protocol used in a Storage Area Network • Identify Fabric Topologies and different types of Connectrix Products • Explain how to secure a SAN using series-specific solutions
MirrorView and SAN Copy Foundations Remote Replication, MirrorView and SAN Copy Terminology, features architecture, theory of operations and management, and SAN Copy data mobility concepts			1 Hour	• Describe the architecture, features and benefits of remote replication on the CLARiiON storage platform • Explain the various CLARiiON remote replication solutions
SnapView Foundations Local replication, SnapView terminology, features architecture, theory of operations and management, CLARiiON snapshots, and clones			1 Hour	• Describe the architecture, features and benefits of SnapView on the CLARiiON Storage Platform • Explain the various Local Replication Solutions available in SnapView
CLARiiON Hardware CX4 architecture and features, DAE3P features and rules, CX4-120, 240, 480, and 960 architecture, enterprise flash drives			2 Hours	• Describe CLARiiON CX4 architecture and features, Cabling and CX4-120, 240, 480, 960 Specifications • Discuss enterprise flash directors
CLARiiON Foundations CLARiiON models and components, management options, features			2 Hours	• Identify supported CLARiiON RAID Types • Identify CLARiiON data integrity and availability features • Identify CLARiiON management options and storage provisioning objectss
Information Storage and Management Exam (E20-001)				

Information Storage and Management (5 days) OR (20 hours) (4 e-Learning modules)
Information Storage and Management (ISM) is the only course of its kind to fill the knowledge gap in understanding varied components of modern information storage infrastructure. It provides a strong understanding of information storage technologies which prepares you to learn advanced concepts, technologies and also enable you to make more informed decisions in an increasingly complex IT environment. You will learn about the architectures, features, and benefits of Intelligent Storage Systems; storage networking technologies such as FC-SAN, NAS, and IP-SAN; long-term archiving solution – CAS; business continuity solutions such as backup and replication, the increasingly critical area of information security, and the emerging field of storage virtualization including storage resource management. The technologies described in the course are illustrated and reinforced with EMC product examples. Realistic case studies enable the participant to design the most appropriate solution for given sets of criteria.

Levels: SPECIALIST — ASSOCIATE

ValuePaks

Purchase Options (Velocity Service Partners Only)

EMCIE-CLN Solutions Instructor-Led PARTNERS ONLY
CE-VALIE-CLN $2,500
*Contains associate level, as well as one Instructor-Led, ten self-paced e-Learning courses and three Proven Professional Exam vouchers. Pricing shown reflects partner discount.

Expert Level Knowledge

CLARiiON Remote Replication Advanced Workshop
30 TU ILT 3 Days

This workshop focuses on the deployment of CLARiiON Replication Software in a FLARE 24 CLARiiON environment.

CLARiiON Performance Workshop
30 TU ILT 3 Days

This expert level course details the configuration and implementation of CLARiiON storage for optimal performance in customer environments. The skills taught here are useful for environments requiring careful initial data layout or analysis of potential, or real, performance issues. Extensive hands-on labs are provided for basic CLARiiON configurations, as well as those using SnapView, MirrorView, SAN Copy, and MirrorView/ Asynchronous for backup, testing, and disaster recovery.

Microsoft Exchange Integration with CLARiiON Workshop
40 TU ILT 4 Days

This expert level workshop focuses on the deployment of Exchange 2007 in a FLARE 24 CLARiiON environment. Learn the best practices to implementing Exchange 2007 on an external CLARiiON storage array, such as spindle count, RAID configuration, and database layout. Also considered is local replication and recovery using EMC Replication Manager 5.0, including database DR, and mailbox recovery. Finally, remote replication solutions—both synchronous as well as point in time—will be covered using such EMC technologies as MirrorView, SAN Copy, RepliStor, and RecoverPoint.

OR

Microsoft SQL Server Integration with CLARiiON Workshop
30 TU ILT 3 Days

Learn the best practices to implementing SQL Server 2005 on an external CLARiiON storage array, such as spindle count, RAID configuration, and database layout. Also considered is local replication and recovery using EMC Replication Manager 5.0, including database DR. Finally, remote replication solutions—both synchronous as well as point in time—will be covered using such EMC technologies as MirrorView, San Copy, RepliStor, and RecoverPoint.

CLARiiON Solutions Expert Exam for Implementation Engineers

EXAM E20-850

Additional Training

VMware vSphere Integration with CLARiiON
50 TU ILT 5 Days

This instructor-led course provides students with the opportunity to acquire hands-on experience integrating EMC CLARiiON storage with VMware vSphere ESX 4 Server. The course focuses on operations required when provisioning, managing, migrating and replicating CLARiiON storage to support a VMware vSphere ESX 4 Server, and examines some of the specifics of storage management in an ESX 4 Server environment. In addition topics will include the CLARiiON storage platform and ESX 4 Server virtualization platform, base connectivity, array management, virtual machine storage provisioning, storage visibility, multipathing, business continuance operations, disaster recovery operations (both with CLARiiON Replication Software) and CLARiiON / VMware storage best practices.

EMC RecoverPoint Architecture and Management Overview
3 TU e-Learning 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 Disk Library Fundamentals
2 TU e-Learning 1 Hour

This foundations level course introduces students to the basic EMC Disk Library (EDL) concepts, preparing them for further study of installation or implementation procedures. The class includes the main functionality of a EMC Disk Library and where it fits within the enterprise. Class topics focus on features, functionality, and hardware/software architecture, up to version 3.0 of the emulation code.

Replication Manager Workshop
50 TU ILT 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.

EMC Disk Library Implementation and Management
30 TU Online ILT 3 Days

This Online ILT 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 of 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.

Navisphere Secure CLI Scripting
30 TU ILT 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.

EMC RecoverPoint Design and Deployment Workshop
50 TU ILT 5 Days

This RecoverPoint Design and Deployment Workshop Course is designed for internal EMC Employees and Partners involved with the planning, designing, deploying, and supporting of RecoverPoint appliances to EMC SAN environments. An integral part of the training will address: product positioning, product architecture, and operations.

DiskXtender for Windows

Product/Technology-Specific

This curriculum is intended for any storage professional who deploys and manages EMC DiskXtender in midsize Microsft Windows environments. This curriculum provides the knowledge and Lab experiences required to fully exploit the capabilities of automated file archiving solutions; configure disk, optical, tape, and EMC Centera as secondary storage; migrate data and reduce primary storage acquisition costs and management overhead.

ValuePaks

Courses	Video Instructor-Led Learning	Instructor-Led Training	e-Learning	Course Objectives
DiskXtender for Windows Exam (E22-310)				
EMC DiskXtender for Windows Installation, Configuration, and Management DiskXtender Overview, Installing DiskXtender, Configuring File System Manager, Storage media and media services, DiskXtender with Centera, Managing data using DiskXtender, DiskXtender search module, Disaster recovery for DiskXtender, High availability solutions for DiskXtender, Troubleshooting DiskXtender		3 Days		• Explain the DiskXtender solution, benefits and components • Install and configure DiskXtender File System Manager • Describe storage media types and DiskXtender media services • Configure NAS and Centera media • Manage data using DiskXtender • Search the archive using DiskXtender Search Module • Configure DiskXtender for disaster recovery and high availability environments • Troubleshoot DiskXtender
EMC DiskXtender for Windows Concepts Introduction to Archiving, The DiskXtender Solution, DiskXtender Architecture, DiskXtender Features			2 Hours	• Define Archiving • Differentiate between Backup and Archive • Explain the DiskXtender solution • List the components of DiskXtender software • Describe various DiskXtender media services and media types • Identify features and benefits of DiskXtender

Purchase Options

DiskXtender for Windows ValuePak*
CE-VALPAKDX $3,000
*Contains Instructor-Led

DiskXtender for Windows Video ValuePak*
CE-VIDVPKDX $1,800
*Contains Video-ILT

For details on purchase options see page 77.

EMC Disk Library and B2D

Product/Technology-Specific

This curriculum is for any storage professional who deploys and manages EMC Disk Library as part of corporate backup and recovery environments. This curriculum provides the knowledge and Lab experiences required to fully exploit the capabilities of our industry-leading open system disk Libraries. Online ILT provides live instructor—peer interactions as well as access to the actual Lab environment via Internet connection.

ValuePaks

Courses	Video Instructor-Led Learning	Online ILT	e-Learning	Course Objectives
				EMC Disk Library and Backup to Disk Technologies Exam (E22-315)
EMC Disk Library Implementation and Management Configuration, management, OS and backup software configuration, advanced configuration, troubleshooting and considerations		3 Days		• Implement an EMC Disk Library DL4000 • Manage an EMC Disk Library DL4000 • Use troubleshooting features
EMC Disk Library Fundamentals EMC Disk Library features and positioning, EMC Disk Library architecture			1 Hour	• Explain general tape library features and benefits • Explain EDL positioning and solution target • List EDL models and components • Describe EDL hardware architecture • Describe EDL software architecture • Describe EDL features
EMC NetWorker Integration with EMC Backup-to-Disk Technologies Overview, NetWorker and backup-to-disk, configuration			2 Hours	• Identify the editions of EMC NetWorker software, its architecture and terms • List the requirements for a successful backup-to-disk integration • State the differences between NetWorker's "file type device" and "advance file type device"
Veritas NetBackup Integration with EMC Backup-to-Disk Technologies Overview, NetBackup and B2D,Configuration			2 Hours	• Identify the editions of Veritas NetBackup software, its architecture and terms • List the requirements for a successful Backup to Disk integration • Describe the NetBackup Backup to Disk features • Configure disk backup using Veritas NetBackup
IBM TSM Integration with EMC Backup-to-Disk Technologies Overview, TSM and Backup-to-Disk, Configuration			2 Hours	• Identify the editions of IBM Tivoli Storage Manager software, its architecture and terms • Identify the requirements for a successful backup-to-disk integration • Configure disk backup using Tivoli Storage Manager
SAN Backup-to-Disk Overviews SAN backup to disk overview, recommendations and EMC offerings, performance and sizing considerations, CLARiiON and Symmetrix implementations			2 Hours	• Discuss the advantage of disk-based backups in a SAN environment • Identify performance and sizing considerations
LAN Backup-to-Disk Overview LAN backup to disk overview and recommendations, backup via storage nodes, backup to Celerra NS arrays			2 Hours	• Describe disk-based backups in a LAN environment including network considerations • Discuss recommendations for backup to disk with EMC Celerra

ValuePak

Purchase Options

EMC Disk Library 4000 ValuePak
CE-VALPAKEDL $2,000

For details on purchase options see page 77.

EMC SourceOne
Product/Technology-Specific

This certification track is ideally suited for EMC SourceOne administrators with responsibility for installing, configuring, and troubleshooting EMC SourceOne Email Management, or eDiscovery – Kazeon. Day-to-day administrative tasks such as creating various activities around email archiving, searching for and restoring archived messages, tuning, and monitoring of the servers are also covered.

ValuePaks

Courses	Online ILT	Instructor-Led Training	e-Learning	Course Objectives
The following curriculum is recommended for candidates preparing to take the EMC SourceOne eDiscovery - Kazeon Administration exam. (E22-189).*				
EMC SourceOne eDiscovery - Kazeon Administration Fundamentals Introduction to EMC Source One eDiscovery - Kazeon, Hardware Installation and Configuration, Software Configuration and Sizing, Connectors and Installation, Command-line Interface (CLI), User Management, Data Management and Data Repositories, Jobs and Crawls, Introduction to the Legal Application, Searching, Data Export Workflows, Reporting, Extraction and Assignment Rules, Operational Best Practices	2 Days	2 Days		• Install and configure the appliance servers • Install license keys • Start the cluster • Discover file systems • Test and verify the system • Conduct deep crawls • Perform searches • Tag and cull items • Create reports • Extract responsive data
The following curriculum is recommended for candidates preparing to take the EMC Proven Professional – SourceOne for Microsoft SharePoint Administration Exam (E22-186).*				
EMC SourceOne for Microsoft SharePoint SourceOne for SharePoint EBS Provider - overview, architecture, configuration and installation, EBS troubleshooting and maintenance, archiving SharePoint content - overview, architecture and configuration, SharePoint Archive Search - overview, architecture and configuration, archiving and Search Troubleshooting and maintenance	2 Days	2 Days		• Examine product architecture • Deploy the EMC SourceOne for Microsoft SharePoint EBS provider • Configure archival activities that will archive SharePoint content into the EMC SourceOne Native Archive • Configure the EMC SourceOne for Microsoft SharePoint search components that allow end users to search on content stored in the EMC SourceOne Native Archive directly from Microsoft SharePoint • Execute troubleshooting and maintenance techniques
The following curriculum is recommended for candidates preparing to take the EMC Proven Professional – SourceOne Email Management Administration (E22-185)				
EMC SourceOne Email Management EMC SourceOne Overview, EMC SourceOne Architecture, Pre-Installation Planning, Installation, Install and Configure Domino Support, EMC SourceOne Administration Console, Configuring Archives, Configuring Mapped Business Folders, Managing Organizational Policies, Configuring and Managing Activities, Journaling Activities, Managing Jobs, Managing Worker Servers, EMC SourceOne Search, Configuring and Managing Rules, PST and NSF Processing Activities, Shortcut Processing Activities, User-Directed Archive Activities, Debugging and Troubleshooting, Maintaining EMC SourceOne	5 Days	5 Days		• Install and Configure EMC SourceOne • Configure Worker Servers and Repositories • Manage Archives, Tasks, Activities, and Jobs • Create and manage business policies • Verify message archival • Perform Basic Searches

*** To earn the EMC SourceOne for Microsoft SharePoint Administrator credential, you must earn a passing score on both the E22-185 EMC SourceOne Email Management Administration and the E22-186 EMC SourceOne for Microsoft SharePoint Administration exams.**

Additional Training

EMC SourceOne Email Management Delivery Best Practices
ILT 1 Day

The course provides training for implementors of EMC SourceOne Email Management. It is designed to present some guidelines to follow and to identify resources available to achieve smooth and consistent installations and deployments on customer sites.

Purchase Options

*** The purchase options described in this catalog do not apply to this offering. Visit http://education.EMC.com › Other EMC Sites, for purchase options**

EMC Technology Foundations

Product/Technology Specific

EMC² PROVEN PROFESSIONAL

This course (or e-Learning curriculum) is for any IT professional who plans, deploys, or manages EMC information storage technologies. It introduces you 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 an EMC technology investment.

ValuePaks

EMC Technology Foundations eValuePak

Courses	Video Instructor-Led Learning	Instructor-Led Training	e-Learning	Course Objectives
				EMC Technology Foundations Exam (E20-040)
IT Management Technology IT Management Technology Foundations			1 Hour	• Describe the goals of IT management systems • Explain the EMC Smarts architectural concepts • Discuss individual domain silos that comprise an overall IT infrastructure
Replication Technology Foundations RecoverPoint, Replication Manager, Open Replicator, RepliStor Overview			2 Hours	• Identify the concepts, value, and environmental aspects of RecoverPoint, Replication Manager, Open Replicator, RepliStor
Archive Technology Foundations Content Addressed Storage (CAS), Emailxtender Overview, Diskxtender For Windows Overview			2 Hours	• Explain the EMC Smarts architectural concepts • Discuss individual domain silos that comprise an enterprise IT infrastructure
ControlCenter Foundations ControlCenter terminology, features, architecture, theory of operations, and management			2 Hours	• Describe the architectural components and theory of operations of ControlCenter • Use ControlCenter to carry out common storage management tasks
SRDF Foundations Features, architecture, theory of operations and benefits of the SRDF family of Symmetrix remote replication solutions			2 Hours	• Describe architectural components and theory of operations of SRD • Explain how various replication options of SRDF can be integrated into Symmetrix DMX business continuity/disaster recovery environment
TimeFinder Foundations Features, architecture, theory of operations, and benefits of the TimeFinder family of Symmetrix local replication solutions			2 Hours	• Describe the architectural components and theory of operations of TimeFinder • Explain how various replication options of TimeFinder can be integrated into Symmetrix business continuity / disaster recovery environment
Symmetrix Foundations Symmetrix disk array architecture, volume protection, I/O path, connectivity , vaulting and high availability features			2 Hours	• Draw and describe the basic architecture of Symmetrix DMX and V-Max • Theory of operations, connectivity options, and key features
MirrorView and SAN Copy Foundations Remote Replication, MirrorView and SAN Copy Terminology, features architecture, theory of operations and management, and SAN Copy data mobility concepts			1 Hour	• Describe the architecture, features and benefits of remote replication on the CLARiiON storage platform • Explain the various CLARiiON remote replication solutions
SnapView Foundations Local replication, SnapView terminology, features architecture, theory of operations and management, CLARiiON snapshots, and clones			1 Hour	• Describe the architecture, features and benefits of SnapView on the CLARiiON Storage Platform • Explain the various Local Replication Solutions available in SnapView
PowerPath Foundations PowerPath terminology, features, architecture, theory of operations and management			1 Hour	• Discuss the features and benefits of PowerPath in an open systems host environment • Explain how PowerPath achieves transparent recovery of host to storage channels
Connectrix Foundations EMC Connectrix B Series, M Series and MDS Series, EMC SAN Manager, Connectrix Manager, native switch management tools			1 Hour	• Describe the architecture and key features of the Connectrix B, M and MDS Series switches and directors • List and explain EMC and native switch management tools
CLARiiON Foundations CLARiiON models and components, management options, features			2 Hours	• Identify supported CLARiiON RAID Types • Identify CLARiiON data integrity and availability features • Identify CLARiiON management options and storage provisioning objectss
Celerra Foundations Celerra platforms, Celerra/NAS Replication Technologies, Celerra/NAS Backup options			2 Hours	• Describe the architecture, theory of operations and key features of the Celerra NAS platform • Explain replication and backup products and technologies that support a Celerra NAS environment
EMC Storage Virtualization Foundations Invista SAN virtualization, NAS virtualization and RecoverPoint replication and protection virtualization			2 Hours	• Describe the architecture and key features of EMC storage virtualization products • Explain common deployments of EMC storage virtualization products
EMC Backup Technologies Foundations NetWorker, EMC Disk Library, DiskXtender, Avamar, EMC Backup Advisor architecture, and key features			2 Hours	• Describe the architecture and key features of EMC backup technologies and products • Explain common deployments of core EMC backup products
EMC Technology Foundations OR 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.		5 Days		• Discuss architecture, theory of operations, key features and common deployments of core EMC information storage technologies and products • Please refer to e-Learning section of this table for detailed products and technology coverage

Purchase Options

EMC Technology Foundations eValuePak*
CE-VALPAKETF $2,000

For details on purchase options see page 77.

Ionix for IT Operations Intelligence (formerly Smarts)

Product/Technology-Specific

For any networking professional who deploys and leverages end-to-end network management solutions. You will learn to configure the EMC Ionix for IT Operations Intelligence suite of software, view and understand the diagnostic analysis results, and resolve network and service issues.
Prepare for your Network Management (Smarts) Certification.

ValuePaks: EMC Smarts SAM/IP Administrator ValuePak; EMC Smarts Global Console ValuePak

Courses	Video Instructor-Led Learning	Instructor-Led Training	e-Learning	Course Objectives	Levels
Network Management - Smarts Administration (E22-250)					
EMC Ionix Service Assurance Manager Training (Smarts) Install, configure, and administer EMC Ionix Service Assurance Manager (SAM); create user 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		• View the results of the EMC Ionix diagnostic analysis and understand the network and service impacts caused by failures • Automate actions to respond to failure notifications • Incorporate customer and service information into Service Assurance Manager to manage infrastructure in the context of business	
EMC Ionix IP Manager Administrator (Smarts) Training Install and configure EMC Ionix 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		• Install and configure EMC Ionix software • Understand how to start and stop EMC Ionix for IP Domain Manager with the various options • Launch the powerful EMC Ionix Discovery process	
EMC Ionix IT Operations Intelligence Overview EMC Ionix IT Operations Intelligence introduction and architecture, domain managers, ITOps Service Assurance Manager, additional domain managers, EMC Ionix ITOps Performance Reporter			2 Hours	• Describe the EMC Ionix IT Operations Intelligence suite, and the value it brings to IT management • Discuss the architecture of the ITOps suite of network monitoring products, the value of automation, and automatic root-cause analysis • Identify the different Domain technologies supported, and describe the function of Cross Domain correlation	
EMC Ionix Service Assurance Global Console (Smarts) Service Assurance Manager Global Console, customization of a global console, the Notification Log Console, the Topology Browser, the Map View			4 Hours	• View and explore the results of the EMC Ionix diagnostic analysis • Maintain user logins and associated user profiles • Automate actions to respond to failure notifications • Incorporate customer and service information into SAM to manage infrastructure in the context of business	
EMC Ionix Service Assurance Global Console (Smarts) Advanced Business Impact Manager, understanding groups, the Summary View, the Status Table View, Context Sharing			4 Hours	• Respond to failure notifications • Customize the layout of the EMC Ionix Console	

Purchase Options

EMC Smarts SAM/IP Administrator ValuePak
CE-VALPAKSMT $5,000

EMC Smarts SAM/IP Administrator Video ValuePak*
CE-VIDVPKSMT $3,000
*Contains Video-ILTs

EMC Smarts Global Console ValuePak
CE-VALPAKGCL $700

For details on purchase options see page 77.

Additional Training

EMC Ionix Service Assurance Adapter Platform Training
30 TU ILT 2 Days

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

EMC Ionix Application Connectivity Monitor (Smarts)
20 TU ILT 2 Days

Learn the fundamental concepts, installation, configuration, operation, and maintenance of EMC Ionix 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 Ionix ITOps ASL (Smarts) Training
10 TU ILT 1 Day

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

EMC Ionix MPLS Manager (Smarts)
20 TU ILT 2 Days

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

EMC Ionix Network Protocol Manager (Smarts)
20 TU ILT 1 Day

Learn the fundamental concepts, installation, configuration, operation, and maintenance of EMC Ionix 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.

RecoverPoint Data Replication and Recovery

Product/Technology-Specific

EMC² PROVEN PROFESSIONAL

This curriculum is intended for any storage professional who manages EMC RecoverPoint Continuous Data Protection (CDP), Concurrent Local and Remote Replication (CLR) and Continuous Remote Replication (CRR) appliances. This curriculum offers the required knowledge and Lab experiences needed to fully exploit the capabilities of the solution in complex SAN environments.

RecoverPoint Partner ValuePak

Courses	Video Instructor-Led Learning	Instructor-Led Training	e-Learning	Course Objectives
RecoverPoint Data Replication and Recovery Exam (E22-275)				
RecoverPoint Implementation Implementation Overview, Host Splitter (kdriver) Implementation, Working with Consistency Groups, CLARiiON Array Splitter, SANTap Fabric Based Splitting, Brocade Fabric Based Splitting, Managing the RecoverPoint Environment, Upgrades, Troubleshooting		5 Days		• Install and configure RecoverPoint • Configure required SAN environment to support RecoverPoint in the following environments: o kdriver Splitter o SANTap (Cisco) or SAS API (Brocade) Splitters o CLARiiON Splitter • Migrate from kdriver to either array or fabric based splitting • Configure CDP, CRR, CLR consistency groups and perform both failover and restore functions for RecoverPoint replication environments • Configure RecoverPoint Appliance connectivity to multiple host operating environments • Provide advanced fabric configuration details and troubleshooting methodologies • Provide basic planning and design details for RecoverPoint environments • Troubleshoot RecoverPoint implementation issues
EMC RecoverPoint Architecture and Management Overview Overview of EMC RecoverPoint, Architecture of EMC RecoverPoint, Planning and Design Considerations Implementation Overview			2 Hours	• State key features of EMC RecoverPoint • Describe the architecture of the RecoverPoint solution for CRR and CDP implementations • Apply suitable design guidelines to create a supported RecoverPoint solution • Describe the steps to configure replication using EMC RecoverPoint
RecoverPoint Write-Splitting Technology Overview RecoverPoint host, fabric and array-based splitters			2 Hours	• Perform the steps necessary to install and verify a successful deployment of kdriver • Discuss basic planning and design considerations for implementing a RecoverPoint cluster with the CLARiiON splitter • Describe the installation steps required to deploy and configure CLARiiON splitters • Provide an overview of the MDS platform • State the benefits and limitations of a SANTap solution • Describe the Multi-VI and Frame-redirect modes of operation
RecoverPoint Theory of Operations and Internals How the cluster mechanism behaves and operates, what processes and internal events occur during normal operation and disaster states			1 Hour	• Explain the RecoverPoint theory of operations, including: listing internal processes and understanding the replication process • Give an overview of RecoverPoint cluster mechanism and how SiteControl works • Describe the RecoverPoint model and how the system handles internal communications • Understand the replication processes and how disasters effect ability to replicate • Definite disasters and base troubleshoot a complex replication environment

Purchase Options

RecoverPoint ValuePak PARTNERS ONLY
CE-VALPNRRP $2,500*

Includes one Proven Professional Exam voucher. Pricing shown reflects partner discount. For details on purchase options see page 77.

Additional Training

RecoverPoint Planning and Design - Online ILT

Online ILT 20 TU 2 Days

This course focuses on advanced features, procedures and concepts used in designing, deploying, and supporting RecoverPoint environments. The course will cover detailed coverage of RecoverPoint in a variety of different scenarios, including planning and designing a new implementation with different splitter types, migration of the various components in the environment and upgrades of software and hardware. This course supports RecoverPoint V3.2.

Symmetrix Mainframe Business Continuity

Product/Technology Specific

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

ValuePaks: Mainframe ValuePak

Courses	Online ILT	Instructor-Led Training	e-Learning	Course Objectives
Symmetrix Mainframe Business Continuity Exam (E222-220)				
Symmetrix Mainframe Business Continuity Management TimeFinder/Mirror Base, TimeFinder/Mirror Mainframe Snap Facility, TimeFinder/Mirror Utility, SRDF/S, SRDF/CG, SRDF/AR, Transmit Idle, Delta Set Extension, Write Pacing and Automated Recovery	5 Days	5 Days		• Describe and demonstrate TimeFinder management operations, including TimeFinder/Mirror, TimeFinder Snap/Clone Facility and TimeFinder Utility. • Explain important host considerations for successful implementations of local and replication solutions using TimeFinder and SRDF in z/OS environments • Describe and demonstrate 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 • Describe the advanced SRDF/A features of Transmit Idle, Delta Set Extension, Write Pacing and Automated Recovery • Describe the architecture and operations of Cascaded SRDF as well as SRDF/EDP
AutoSwap Architecture and Operations Introduction, Considerations, Swap Operations, AutoSwap Parameters, AutoSwap Commands			2 Hours	• Explain the purpose and operation of AutoSwap • Use AutoSwap capabilities for planned and unplanned Swap
Introduction to Mainframe Resource Pack Base Presentations and demonstrations using the EMC's ResourcePak Base (RPB) product			2 Hours	• Describe ResourcePak Base functions and uses • Use Symmetrix Control Facility (SCF) commands to perform operations • Describe the considerations for use on z/OS hosts
TimeFinder Foundations TimeFinder terminology, features, architecture, theory of operations and management, TimeFinder Mirror, Clone, and Snap local replication solutions			2 Hours	• Describe the architectural components and theory of operations of TimeFinder • Explain how various replication options of TimeFinder can be integrated into a Symmetrix DMX business continuity/disaster recovery environment
SRDF Foundations Symmetrix business continuity solutions for remote replication, features, functionality, and benefits of the SRDF family of products			1 Hour	• Describe architectural components and theory of operations of SRDF • Explain how various replication options of SRDF can be integrated into a Symmetrix DMX business continuity/disaster recovery environment
Symmetrix Foundations Symmetrix disk array architecture, volume protection, I/O path, connectivity , vaulting and high availability features			2 Hours	• Draw and describe the basic architecture of Symmetrix DMX and V-Max • Theory of operations, connectivity options, and key features

Levels

Purchase Options

Mainframe ValuePak
CE-VALPAKMF $5,000

Additional Training

EMC Disk Library for Mainframe (DLm) Operations and Administration
20 TU Online ILT 2 Days

This course provides participants with lecture and instructor or group-led, hands-on experience in understanding EMC's Disk Library for mainframe (DLm) concepts, customization, and usage in a z/OS environment. This course will expand on a students existing knowledge of disk based tape replacement technology using EMC's DLm solution.

Mainframe Business Continuity—SRDF/Star Solutions
50 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.

Celerra Unified Storage QuickStart

This curriculum provides education and certification required for new Velocity Service Partners who setup Celerra Unified systems. This series of modules provide the knowledge required for installing the Celerra Unified models delivered with the Celerra Startup Assistant (CSA) and provisioning wizards. The courses focus on the functional and architectural knowledge required to understand and install these systems. Students learn the hardware associated with these models, the essential Celerra Startup Assistant functionality for implementation. This QuickStart currently supports Celerra version 5.6.

Courses	Video Instructor-Led Learning	Instructor-Led Training	e-Learning	Course Objectives
Celerra Unified Storage QuickStart Assessment				
Celerra Unified QuickStart: Basic Maintenance and Storage Provisioning Identify CRU and FRU Replacement Procedures, Implementation using the Navisphere Service Taskbar			1 Hour	• Download, Install and implement the Navisphere Service Taskbar (NST) • Add storage to the CLARiiON • Run Disk Replacement utility
Celerra Unified QuickStart: Basic Management Overview Celerra Manager Basics, CLARiiON Management Basics			2 Hours	• Locate FRU and CRU procedures • Download, Install and implement the Navisphere Service Taskbar (NST) • Adding storage for Celerra and verifying a Storage System • Run Disk Replacement utility
Celerra Unified QuickStart: Provisioning for FC-connected hosts Fibre Channel Basics Overview, FC Host Connectivity to Unified Storage Platforms, Provisioning Storage for FC-connected Hosts, Host Access to Provisioned Storage			1 Hour	• Overview of management GUIs • Performance and monitoring capabilities • Locate event information using Celerra Manager • Adding storage for Celerra
Celerra Unified QuickStart: Basic Implementation using Provisioning Wizards Provision Storage, Create CIFS Shares, Create NFS Exports, Create iSCSI LUNs, Test and Failback Blade Failover, Basic Troubleshooting			2 Hours	• Create new RAID Groups on the array • Bind LUNs from the RAID Groups • Create new Storage Groups and add LUNs • Attaching hosts (Windows, Linux)
Celerra Unified QuickStart: Initial Initialization and Configuration using CSA Pre-installation Tasks, Initializing the Celerra			2 Hours	• Use the Provisioning Wizards tool to configure the Celerra • CIFS (w/Network), NFS (w/Network), iSCSI (w/Network) (Windows & Linux)
Celerra Unified QuickStart:NX4 Hardware Overview & Installation Hardware and Features, Supported Configurations and Upgrades, Unpacking and Cabling			1 Hour	• Pre-installation tasks for the Celerra • Key steps of the Celerra installation • Registration and Configure ConnectHome • Troubleshooting Unified initial installations
Celerra Unified QuickStart:NS-120 Hardware Overview & Installation Hardware and Features, Supported Configurations and Upgrades, Unpacking and Cabling			2 Hours	• Supported configurations and ordering options • Management features (if applicable) • Available hardware upgrades • Installation
Celerra Unified QuickStart: Product Installation and Configuration Overview Concepts of the Celerra Network Server, Unified Storage Installation Overview, Celerra Management Options			1 Hour	• Major components of a Unified system • Product options (Unified, Gateway, etc) • User interface options for managing Unified Celerra • Key tasks for installation
Celerra Foundations Celerra Architecture, Theory of Operations, Features and Functions, Business Continuity and Backup Solutions, Platforms, Benefits and Requirements			2 Hours	• Identify the concepts, architecture, terminology, and environmental aspects of NAS using the Celerra • Describe Celerra features, functions, and Management software offerings • Different Celerra Business Continuity options and Backup solutions

This training is available to Velocity Service Partners free of charge.

CLARiiON AX4-5 and CX4-120,240 QuickStart

This curriculum provides education and certification required for new Velocity Service Partners who implement CLARiiON AX4-5 and CX4-120,240 storage systems in Windows environments. This curriculum is delivered in self-study e-Learning to eliminate the need for travel and to minimize the time away from your job. This solution includes an associate level certification curriculum enabling formal validation and recognition expected from partner technical resources.

Courses	Video Instructor-Led Learning	Instructor-Led Training	e-Learning	Course Objectives
CLARiiON CX4 Series QuickStart Assessment				
CLARiiON QuickStart 05: Zoning and Event Monitor **CLARiiON QuickStart 04: Host Attach** **CLARiiON QuickStart 03: Basic Management** **CLARiiON QuickStart 02: Array Installation and Initialization** **CLARiiON QuickStart 01: Hardware**			10 Hours	• List the hardware features of the CLARiiON CX4 and AX 4-5 Series storage systems • Initialize and configure a CX4 Series CLARiiON • Perform basic management operations on a CX4 Series CLARiiON • Attach a Windows host to a CX4 Series CLARiiON in a: o Fibre Channel environment o iSCSI environment • Configure Event Monitor and perform basic troubleshooting
PowerPath Foundations PowerPath terminology, features, architecture, theory of operations and management			1 Hour	• Discuss the features and benefits of PowerPath in an open systems host environment • Explain how PowerPath achieves transparent recovery of host to storage channels
Connectrix Foundations Storage connectivity overview, SAN architecture and components, SAN fabric topologies, EMC's Connectrix range, securing a SAN, SAN management tools, IP-based SAN extension, SAN technical positioning			1 Hour	• Components, services, and FC Protocol used in a storage area network • Identify fabric topologies and different types of Connectrix products • Explain how to secure a SAN using series-specific solutions
CLARiiON Foundations CLARiiON models and components, management options, features			2 Hours	• Identify supported CLARiiON RAID Types • Identify CLARiiON data integrity and availability features • Identify CLARiiON management options and storage provisioning objectss

This training is available to Velocity Service Partners free of charge.

Data Domain Installation, Implementation and Administration QuickStart

This curriculum provides education and certification required for Velocity Service Partners who install and implement Data Domain product.

Courses	Video Instructor-Led Learning	Instructor-Led Training	e-Learning	Course Objectives
				End of course assessment
Data Domain System Installation Installation and initial configuration of Data Domain systems, disk storage expansion shelf connections, VTL Fibre Channel connections, installing rails and racking the system, connecting cables, configuring network connectivity for access to the Data Domain system by system administrators, and verifying interoperability with connected devices.			3 Hours	• Understand and effectively use the installation documentation and Customer Site Information Data Sheet • Describe safety and regulatory requirements for power, system racking, and electrostatic protections • Physically connect Data Domain Systems and storage shelves with supplied data and networking cables • Connect to the Data Domain system console and log into the system • Establish network connectivity and configure network parameters • Bring ES20 expansion shelf disks online and verify disk status • Describe Data Domain Gateway system connection to external storage • Complete installation verification tasks including; feature licenses, installation checklist and sending autosupport (ASUP), showing installation status
				End of course assessment
Data Domain Technology and Systems Introduction Data Domain In-line Deduplication, product overview, system capacities, common hardware features, and system differences, system login, management and licensing options overview, hardware redundancy, autosupports, alerts and file protection features			1 Hour	• List the challenges behind conventional backup technology and describe how inline deduplication addresses them • Describe the product family of Data Domain systems and distinguish the difference between Data Domain Appliances and Gateway Systems • Describe the basic features of the Data Domain Operating System and list the five optional licenses available • Describe system data protection measures and list the four file system data protection measures that ensure customer data integrity • Show the common networking layouts employed for Data Domain Systems and list the common protocols supported
				End of course assessment
Data Domain System Administration Data Domain system concepts, configuring and integrating systems into an existing environment, upgrading systems, connecting to the network and interoperating with backup software solutions, performing data backups, replicating data to offsite locations, restoring data, and recovering from a disaster.			6 Hours	• Describe Data Domain features, benefits, system sizing, network placement and integration • Configure basic settings, CIFS shares and NFS mounts, backup data • Configure compliance • Analyze and project capacity utilization • Manage and optimize cleaning, sanitize data • Verify steady state operation • Configure replication • Use autosupports, logs, and alerts • Monitor via SNMP • Recover data • Select typical installation methods, models and network locations • Configure VTL and/or OST • Configure data access rights and permissions • Upgrade system software, rebuild file systems • Manage software licenses • Explain integration with 3rd party backup solutions as well as database and VM backup tools

This training is available to Velocity Service Partners free of charge.

Data Protection Advisor (DPA)

Benefits any storage professional who is currently responsible for or is planning to be responsible for implementing and managing the Data Protection Advisor product. You will learn to implement and manage tasks related to the backup option of the Data Protection Advisor product.

Courses	Online ILT	Instructor-Led Training	e-Learning	Course Objectives
Data Protection Advisor for Backups Implementation and Management Overview, Installation, Configuration and Administration, Management, Advanced Administration and Troubleshooting	3 Days			• Install and configure the different DPA components • Manage the product through the GUI • Run and customize reports
EMC Data Protection Advisor Fundamentals Overview and positioning, architecture			2 Hours	• Describe Data Protection Advisor Architecture • Identify platform requirements • Discuss application and device support • Explain how data gathering works

Purchase Options

Data Protection Advisor ValuePak
CE-VALPAKDPA $3,000

EmailXtender and EmailXaminer Learning Path

For any storage professional who deploys and manages EMC EmailXtender 4.8 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: EmailXtender and EmailXaminer ValuePak

Courses	Video Instructor-Led Learning	Instructor-Led Training	e-Learning	Course Objectives	Levels
EMC EmailXaminer Administration* Plan, install, configure, and administer EmailXaminer Manager and Reviewer applications	✓			• Understand EmailXaminer concepts and functions and how to plan and install EmailXaminer • Demonstrate the ability to perform Administration and Supervisor Tasks • Install EmailXaminer Clients and monitor and troubleshoot EmailXaminer	
EMC EmailXtender Administration for Lotus Notes Plan, install, configure, and administer EmailXtender in a Lotus Domino environment	✓			• Demonstrate the ability to properly connect to and communicate with the targeted mail server for Lotus Notes • Describe and perform the methods for retrieving e-mail messages that are indexed and archived by EmailXtender	
OR					
EMC EmailXtender Administration for Microsoft Exchange Plan, install, configure, and administer EmailXtender in a Microsoft Exchange environment	✓			• Demonstrate the ability to properly connect to and communicate with the targeted mail server for MS Exchange • Describe and perform the methods for retrieving e-mail messages that are indexed and archived by EmailXtender	
EMC EmailXtender Foundations Overview of EmailXtender architecture, functionality, and terminology			2 Hours	• Understand the EMC EmailXtender functionality, installation requirements, administration, definitions, and terminology • Describe the EmailXtender rules, short cutting process, mail extract, and audit capability	

Purchase Options

EMC EmailXtender and EmailXaminer Video ValuePak*
CE-VIDVPKMSG $1,800
*Contains two Video-ILTs

Partners receive 15% discount off the list price shown. For details on purchase options see page 77.

EMC File Management Appliance

This curriculum is intended for any storage professional who design, implement, configure and/or manage EMC File Management Appliance (FMA).

Courses	Online ILT	Instructor-Led Training	e-Learning	Course Objectives
EMC File Management Appliance Planning and Implementation FMA Overview, Centera Fundamentals, FMA Archival Planning, Performance considerations, Implementation, Troubleshooting		2 Days		• Conduct environment analysis to provide best position for FMA within a NAS environment • Provide planning assessment and resource allocation details for FMA deployment and integration • Configure and implement File Management Appliance to archive and recall data using a Celerra and Centera • Design and implement File Management Appliance to archive and recall data using Netapp and Centera
EMC File Management Appliance File Management Appliance overview, installation and configuration, operations, and advanced features			1 Hour	• Explain the concept of tiered storage management • Describe the File Management Appliance (FMA) • Describe the Celerra, Centera, and NetApp filer configuration for archival and retrieval • Describe FMA advanced features
EMC FMA Architecture and Management FMA and tiered storage management, configuring file servers with the FMA, FMA and fault tolerance, file level archiving and recall, orphan files and stub file recovery, security, LDAP, RADIUS, and TACACS+ support, alerts, reports, & monitoring, troubleshooting, Celerra Replicator benefits			4 Hours	• Describe the features and functions of FMA • Explain FMA hardware and software architecture • Explain FMA's fault tolerance options • Describe File Level Archiving and Recall • Define orphan files, stub files, and delayed stubbing • Explain FMA security • Describe user authentication • Define FMA alerts, reporting and monitoring options • Explain FMA troubleshooting techniques

Purchase Options

EMC File Management Appliance ValuePak
CE-VALPAKRFY $5,000

For details on purchase options see page 77.

Ionix for Network Configuration Manager (formerly Voyence)

Benefits any IT professional who installs, administers, or manages Network Configuration Manager solutions.

ValuePaks

Courses	Online ILT	Instructor-Led Training	e-Learning	Course Objectives
EMC Ionix Network Configuration Manager Installation and System Administration EMC Ionix NCM overview, architecture and design, installation, configuration and discovery, common system administration tasks, command line interface, integration modules		2 Days		• Describe the basic capabilities and architecture of EMC Ionix NCM • List platform support and security considerations for deploying EMC Ionix NCM • Describe the distributed and combo EMC Ionix NCM architectures • Explain the sizing, security, and port considerations for a EMC Ionix NCM implementation • List the steps to install EMC Ionix NCM via command-line interface, graphical user interface, and silent installation scripts • Configure EMC Ionix NCM for an initial network discovery • Create and discover a network • Describe common system administration tasks
AND				
EMC Ionix Network Configuration Manager Application and Device Management EMC Ionix NCM console overview, network discovery, global environment, device management, editors, automation library and templates, automation library, compliance wizard, attributed model, workspaces and template merge, report advisor		3 Days		• Manage configuration and change management of devices in an EMC Ionix NCM Network • Describe the Attributed Model and Multi-Configuration • Create and enforce network policies • Determine device state using device properties • Manage devices using the Config Editor, Configlet Editor, Command Editor, and Interface Editor • Use EMC Ionix NCM to roll credentials on network devices • Create Attributed Queries and Compliance Tests • Use the EMC Ionix NCM Event Manager to monitor network system, security, and device events • Create and Enforce Network Policies • Use Engineering Workspaces to plan changes to a network configuration • Configure Voyence Report Advisor and run reports on the state of the network
EMC Ionix Network Configuration Manager PCI Advisor Overview PCI Advisor overview and architecture, installation, reporting options			2 Hours	• Describe the purpose of PCI Advisor • Explain how to install PCI Advisor • List the key components of PCI Advisor • Describe how to adapt PCI Advisor to individual environments • Describe the reporting options offered by PCI Advisor
EMC Ionix Network Configuration Manager Network Advisor Technical Overview NCM Reporting Structure, accessing and navigating Report Advisor, Reports			2 Hours	• Describe the Network Configuration Manager reporting architecture • Explain the purpose of NCM Report Advisor • List the Advisory Series plug-ins available for Report Advisor • Describe private and public reports and dashboards • Explain how to customize Pre-made reports • Describe how to make an Ad Hoc report

Purchase Options

The courses listed above can be purchased individually with a subscription, Training Units, or Credit Card

RSA enVision Learning Path

Benefits Sales Engineers who position and demonstrate RSA products; as well as resolve technical questions about RSA products, and Services Professionals and Consulting Engineers who work with installation and customizing solutions for customers.

ValuePaks	Courses	Video Instructor-Led Learning	Instructor-Led Training	e-Learning	Course Objectives	Levels
					RSA enVision Service exam: Foundation-Level (050-RSAENVSF01)	
	RSA enVision Product Fundamentals - Video-ILT This course provides a background to the RSA enVision product as well as information for installing, configuring and operations important to demonstrations and planning proof-of-concepts. Students learn the essentials of product positioning and solutions, architecture and infrastructure, event management and alerting and reporting functions. Students learn how to initially install and set up an RSA enVision appliance and work through several hands-on exercises to configure and customize the event capture and reporting functions. Students also learn the essentials of developing support for new source devices through the Universal Device Support (UDS) utility.	24 Hours			• Explain the basic architecture and integration of RSA enVision in an enterprise environment • Describe the key steps in installation and configuration of the product • Describe how to collect data and manage events • Establish parameters for data queries to retrieve data for analysis • Create default, custom and bind reports • Establish views from which alerts can be triggered and identify correlated rules for time sensitive alerts • Create watchlists, event traces and tasks to analyze data • Manage vulnerabilities and assets • Describe how to create a new device using UDS	
	RSA enVision SureStart Service Offering Training You should complete RSA enVision Product Fundamentals before taking this course. This course will illustrate SureStart Services; the planning, design, usage, implementation, testing, and closing out of the TS Kit. The SureStart customer profile is described as well as how to identify and qualify key contacts. If you are a partner or in a pre-sales role you should have completed the Technical Certification requirements. If you are in a sales role or a partner selling services, you should have completed the Sales Authorization requirements.			1 Hour	• Conduct the pre-sales activities for an enVision SureStart ES or LS engagement • Manage enVision SureStart ES or LS Service Engagement • Design and implement enVision SureStart ES or LS Service Solution • Complete enVision SureStart ES or LS Testing and provide a Functional Overview	
	RSA enVision Advanced Technical Selling Due to the advanced nature of this course, the learner should have completed Introduction to the Security Information and Event Management (SIEM) Marketplace and Introduction to Selling RSA enVision and the RSA enVision Product Fundamentals courses. This course will delve into enVision demonstration best practices, the logical and physical architectures, customer use cases, the competitive landscape, and will explain the RSA POC process in depth			5 Hours	• Describe the market for enVision, the enVision solution, and the competitive landscapes • Explain the enVision solution to your customer using the logical and physical architecture as a tool to frame the product's key differentiators • Identify at least three planning considerations of the solution in the customer environment including: design, implementation, and integration • Describe best practices to demonstrate key customer use cases • Describe RSA's Proof-of-Concept (POC) process	
	RSA enVision Basic Troubleshooting This course offers training on how to resolve common issues with RSA enVision 4.0. This course assumes that the student has attended the RSA enVision Product Fundamentals course or has equivalent operations experience with RSA enVision – operations are not covered as part of this course. This course is delivered in a self-contained online format with slides, speaker notes with audio as well as examples and demonstrations of reporting and alerting best practices. The course can also be printed for further study. The subject matter in this course, along with RSA enVision Product Fundamentals course, prepares students for the RSA enVision Certified Systems Engineer certification.			4 Hours	• Identify common installation issues • Identify common collection issues • Describe troubleshooting tools and processes that can be used to resolve collection issues • Describe how to configure and resolve issues with RSA enVision services • dentify and resolve reporting and alerting issues • Troubleshoot problems with queries • Describe how to optimize the enVision environment • Identify ongoing maintenance tasks • Describe the recommended process for identifying and resolving issues	
	RSA enVision Reporting and Alerting Best Practices This course offers training on the most efficient and effective ways to utilize the reporting and alerting functions of RSA enVision 4.0. This course assumes that the student has attended the RSA enVision Product Fundamentals course or has equivalent operations experience with RSA enVision – operations are not covered as part of this course. This course is delivered in a self-contained online format with slides, speaker notes with audio as well as examples and demonstrations of reporting and alerting best practices. The course can also be printed for further study. The subject matter in this course, along with RSA enVision Product Fundamentals course, prepares students for the RSA enVision Certified Systems Engineer certification.			4 Hours	• Identify how to enhance performance of reports • Describe the advantages of variables and watchlists • Describe the recommended process for creating reports • Determine the appropriate table for each report • Identify methods to increase the effectiveness of alerts • Describe how to plan for a correlated alert • Describe the advantages of output actions and templates • Identify when to use a Baseline • Describe how to debug a rule • Describe how to use confidence level filtering Describe variables, cached variables and multithreading • Describe how severity levels affect alerts • Identify the advantages of using watchlists in alerts • Describe how to integrate asset information into an alert	

Purchase Options

RSA enVision Video ValuePak
CE-RSA-ENVVID $1,980

Pricing shown reflects partner discount. For details on purchase options see page 77.

RSA Data Loss Prevention Learning Path

Benefits Sales Engineers who position and demonstrate RSA products; as well as resolve technical questions about RSA products, and Services Professionals and Consulting Engineers who work with installation and customizing solutions for customers.

ValuePaks	Courses	Video Instructor-Led Learning	Instructor-Led Training	e-Learning	Course Objectives	Levels
	RSA Data Loss Prevention Service exam: Foundation-Level (050-RSADLPSF01)					
	RSA Data Loss Prevention Product Fundamentals - Video-ILT This course offers training on the architecture, installation and configuration of RSA Data Loss Prevention (DLP) Suite components. The course contents are designed to provide fundamental product information to form a basis for presenting the RSA Data Loss Prevention Suite to customers, provide a conceptual background for further training, and to offer technical grounding for working with the product line. The subject matter in this course prepares students with the classroom component recommended for the RSA Data Loss Prevention (DLP) Systems Engineer Certification.	24 Hours			• Describe the Network, Datacenter, and Endpoint components that comprise the RSA Data Loss Prevention (DLP) Suite. • Install and configure the Linux Appliances and the Windows servers that are provide the infrastructure needed for the RSA DLP Suite • Create simple polices using the supplied templates, and more advanced polices without use of templates. • Describe the tools, and process of creating custom Content Blades. • Install and deploy the RSA DLP Datacenter components Enterprise Coordinator, Site Coordinator, Grid Workers, Scan Groups, and Agent Groups. • Describe how Repository Scan Groups are used in DLP 7.0 • Describe how the Incident and Event workflow is handled in Enterprise Manager • Deploy both the scan and enforcement agents to use the features of RSA DLP Endpoint. • Describe how RSA DLP can fingerprint documents, and Databases to find sensitive	
	RSA Data Loss Prevention Advanced Technical Selling Due to the advanced nature of this course, the learner should have completed Introduction to the Security Information and Event Management (SIEM) Marketplace and Introduction to Selling RSA enVision and the RSA enVision Product Fundamentals courses. This course will delve into enVision demonstration best practices, ; the logical and physical architectures; customer use cases, the competitive landscape, and will explain the RSA POC process in depth.			5 Hours	• Describe the DLP solution and its benefits to the customer • Discuss the technical marketing strategy for the DLP solution and the competitive landscape • Discuss DLPs logical and physical components • Describe how DLP works • Discuss planning, design, implementation, and integration considerations • Describe best practices to demonstrate key customer use cases • Describe RSA's Proof-of-Concept (POC) process	
	RSA Data Loss Prevention SureStart Services Training This course provides students with the knowledge and skills required to perform a SureStart Service for the RSA Data Loss Prevention suite. Students will learn how to position a SureStart, identify risks and opportunites, review the components of a SureStart, identify customer and RSA responsibilities, and identify allowable configurations for a SureStart.			2 Hours	• Provide an overview of the SureStart Service Offering • Identify customer and RSA responsibilities • Identify opportunities for a SureStart Service • Determine the appropriate service duration • Review Fixed Bid Fees • Identify allowable configurations for a SureStart • List and review the RSA DLP SureStart Technology Solutions Kit components	
	RSA Data Loss Prevention Troubleshooting This course provides students with the knowledge and skills required to perform basic troubleshooting of the RSA Data Loss Prevention suite. Students will learn how to solve common problems as well as locate information and documentation for DLP Network, DLP Datacenter, and DLP Endpoint.			2 Hours	• Solve common problems and perform basic troubleshooting for RSA DLP Enterprise Manager, RSA DLP Network, RSA DLP Datacenter and RSA DLP Endpoint • Review log files used for each RSA DLP Suite product • Locate documentation for each RSA DLP Suite product	

Purchase Options

RSA Data Loss Prevention Video ValuePak
CE-RSA-ENVDLP $1,980

Pricing shown reflects partner discount. For details on purchase options see page 77.

VMware

Derive maximum value from your virtualized information infrastructure by investing in VMware education and certification. You will learn to install, configure, secure, and analyze the VMware Infrastructure 3 suite of server virtualization technology. Prepare to become a VMware Certified Professional (VCP).

ValuePaks	Courses	Online ILT	Instructor-Led Training	e-Learning	Course Objectives	Levels
	VMware vSphere: Install, Configure, Manage Introduction to VMware Virtualization, Configuring ESXi/ESX, Installing and Using VMware vCenter Server, Networking, Storage, Virtual Machines, Access Control, Resource Monitoring, Scalability, High Availability and Data Protection, Configuration Management, Installing ESX		5 Days		• Configure and manage ESX networking and storage using vCenter Server • Increase scalability and monitor resource usage using vCenter Server • Apply patches using VMware vCenter Update Manager • Manage higher availability and data protection using vCenter Server	
	VMware vSphere: Troubleshooting Course Introduction, ESXi Command-Line Troubleshooting Methods, ESX, ESXi, and vCenter Server Log Files, Network Troubleshooting, Management Troubleshooting, vMotion Troubleshooting, VMware Infrastructure Troubleshooting, vSphere 4 DRS Cluster Troubleshooting		4 Days		• Use the vSphere Client and the VMware vSphere Management Assistant (vMA) appliance to configure or diagnose and rectify problems • Create and use a network sniffer to capture and display virtual switch network traffic	
	VMware vSphere: Manage Availability Business Continuity, Virtual Machine Clustering, VMware High Availability Clusters, VMware Fault Tolerance, VMware vCenter Server Heartbeat		1 Day		• Describe Microsoft Windows 2003 and 2008 cluster configurations • Configure a VMware High Availability cluster using nondefault options • Deploy fault-tolerant virtual machines using VMware Fault Tolerance (FT)	
	VMware vSphere: Manage Scalability Thin Provisioning, Host Profiles, VMware Distributed Resource Scheduler Clusters, VMware vCenter Linked Mode, VMware ESX Scripted Installation		1 Day		• Using Host Profiles to keep ESX/ESXi hosts uniformly configured and manage compliance • Configuring VMware DRS clusters with non-default options and distributed power management	
	VMware vSphere: Manage for Performance Performance in a virtualized environment, CPU performance, memory performance, guidelines for DRS and resource controls, network performance, storage performance, virtual machine performance, application performance		3 Days		• Use vSphere tools to monitor the performance of ESX/ESXi hosts • Diagnose performance problems relating to CPU, memory, network, and storage on an ESX/ESXi host • Discuss how to achieve an optimal virtual machine configuration	
	VMware vSphere: Manage and Design for Security Security in a Virtual Environment, Secure Virtual Networking, Protecting the Management Environment, Protecting VMware ESX/ESXi Host Systems, Hardening Virtual Machines, Configuration and Change Management		3 Days		• Use vSphere tools to monitor the performance of ESX/ESXi hosts • Diagnose performance problems relating to CPU, memory, network, and storage on an ESX/ESXi host • Discuss how to achieve an optimal virtual machine configuration	
	VMware vSphere: Design Workshop Design process overview, ESX/ESXi host design, vSphere virtual datacenter design, vSphere network design, vSphere storage design, virtual machine design, management and monitoring design, design workshop		3 Days		• Identify design goals, requirements, and constraints • Identify useful information for making design decisions • Recognize and analyze best practice recommendations • Analyze alternative design choices	
	VMware vSphere: Automation with vSphere PowerCLI Introduction to vSphere PowerCLI, Automating ESX Host Configuration, Virtual Machine Provisioning, Configuration, and Protection, Automating Cluster Operations, Automating Reporting		2 Days		• Automate VMware® ESX™ configuration • Automate the provisioning of virtual machines • Automate cluster operations and reporting	
	VMware View Install, Configure, Manage VMware View Overview, View Connection Server, View Desktops, Client Options, Managing View Manager, Linked Clones, Unified Access, Virtual Printing, View Security Server, View Replica Server, VMware ThinApp, Sizing and Best Practices		3 Days		• Configure authentication using devices such as smart cards or cryptographic authentication fobs • Use VMware View Composer to build and manage Linked Clone virtual desktops	
	VMware Site Recovery Manager SRM Overview, Introduction to Disaster Recovery, SRM Planning, SRM Installation, Array Managers, Inventory Mappings ,Protection Group, Recovery Plans, SRM Alarms and Site Status, Troubleshooting, Failover Testing and Failover, Failback (Our recommended prerequisite to attend this course is "VMware Infrastructure 3: Install and Configure"		2 Days		•Create a disaster recovery workflow for your virtual machines using SRM •Configure SRM storage replication adapters •Configure SRM protected and recovery sites and array managers •Define SRM inventory mappings •Create and test SRM recovery plans	

Purchase Options

VMware vSphere: Install, Configure, Manage CE-VMvSphelC5 $3,500	**VMware vSphere: Manage Availability** CE-VMvSphMGA $745	**VMware vSphere: Manage for Performance** CE-VMVSPHMP $2,475	**VMware vSphere: Design Workshop** CE-VMVSPHDW $2,245	**VMware View: Install, Configure, Manage** CE-VMVIEWIC $2,245
VMware vSphere: Trouble-shooting CE-VMvSphTRS $3,295	**VMware vSphere: Manage Scalability** CE-VMvSphMGS $745	**VMware vSphere: Manage and Design for Security** CE-VMvSphMDS $2,500	**VMware vSphere: Automation with vSphere PowerCLI** CE-VMvSphACLI $1,600	**VMware Site Recovery Manager** CE-VMWSRM $1,695

Content Management Server Programming

Application Developer

This certification track is for Application Developers who develop and customize EMC Documentum Content Management applications using DFC classes and interfaces.

Courses	Online ILT	Instructor-Led Training	e-Learning	Course Objectives	Levels
Content Management Server Programming Exam (E20-405)					SPECIALIST
DFC Programming DFC Overview, Clients and Sessions, DFC Type Related Interfaces, Retrieving Objects, Virtual Documents, Searching, Security, Operations, Errors and Exceptions, Logging and Tracing, Working with Business Processes, Server Methods, Business Object Framework Overview, Creating and Using TBOs, Creating and Using Aspects, Creating and Using SBOs, Creating and Using Modules, Using Modules with Lifecycles, Web Services	5 Days	5 Days		• Define Documentum Foundation Classes (DFC) • Use the DFC Javadocs • Compare the Content Server object model to the DFC interface hierarchy • Instantiate objects using factory methods • Create and manage objects • Search the repository using IDfQuery and Search Services • Use the Operations interfaces to work with content • Work with errors and exceptions • Use DFC Logging and Tracing • Create and apply ACLs • Design secure applications using dynamic groups, application tokens • Create server methods for use with the Java Method Server • Create Type-based Business Objects (TBOs), Service-based Business Objects (SBOs) and Aspects • Create custom Modules (IDfModule) for use with Lifecycles	
Content Management Foundations Exam (E20-120)					ASSOCIATE
Technical Fundamentals of Documentum Supplemental Materials Virtual Documents, Object and Content Relationships, Advanced DQL, Advanced Alias Sets, Workflow Manager			3 Hours	• Create and manage virtual documents • Describe the different types of object-content relationships • Use DQL statements • Describe alias resolutions • Use Workflow Manager to create workflows	
Technical Fundamentals of Documentum Enterprise Content Management, Managing Content, Working with Content, Working with the Repository, Objects and Types, Users and Privileges, Groups and Roles, Object Security, Searching, Architecture, System Administration Overview, Webtop Presets, Documentum Projects and Alias Sets (Documentum Composer), Custom Types (Documentum Composer), Workflows Templates (Process Builder), Workflows, Lifecycles (Documentum Composer), Virtual Documents, Object and Content Relationships, Alias Resolution, Advanced DQL, Products and Solutions, Supplemental Material:DocApps and Alias Sets (DAB), Custom Types (DAB), Workflows Templates (Workflow Manager), Lifecycles (DAB)	5 Days	5 Days		• Describe the primary components of the Documentum ECM system • Create and manipulate content in the repository, including renditions and virtual documents • Describe how Documentum manages content and metadata • Describe the Documentum object model • Describe the Documentum security model • Configure users, groups, and roles • Create custom object types • Configure workflows, lifecycles, and alias sets • Configure and install a DocApp • Manipulate the Content Server repository through DQL	

*The purchase options described in this catalog do not apply to this offering.
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Content Management Web Programming
Application Developer

EMC² PROVEN PROFESSIONAL

This certification track is for Application Developers who develop and customize Content Management-related Web applications using the Documentum Web Development Kit (WDK). Detailed customization examples are presented in the advanced portion of the curriculum.

Courses	Online ILT	Instructor-Led Training	e-Learning	Course Objectives	Levels
Content Management Web Application Programming Exam (E20-455)					SPECIALIST
WDK- Advanced WDK Overview/Review, WDK Components, Events and Framesets, Container Components, The Configuration Service, Roles, Creating a Control, Databound Controls Part 1, Databound Controls Part 2, Actions, Advanced Actions, Content Transfer, Authentication Framework, Special Features, Start Location - A Practical Example, Appendix	3 Days	3 Days		• Customize existing WDK components • Create new components • Create client and server-side event handlers • Use container components • Create actions • Create custom scope qualifiers • Use Docbase roles • Configuring and using Presets • Customize and create controls • Customize databound controls • Use content transfer services in components • Use the authentication framework	
WDK- Fundamentals WDK Overview and Installation, Application Layer Configuration, Component Configuration, Component Configuration II, Introduction to Component Customization, Behavior and Events, Controls Overview, Search Components, Docbase and Format Controls, Validation Controls, Themes, Internationalization	2 Days	2 Days		• Identify the advantages of WDK-based applications • Find the application layer hierarchy of a WDK-based application • Identify configuration file best practices • Find the appropriate files to configure WDK-based applications • Differentiate WDK components, forms, controls, and the behavior class • Customize JSP pages to change the properties of controls • Create event handlers in the component's behavior class • Use Documentum Application Builder (DAB) to specify property and tab order • Use validation controls • Create a custom theme • Internationalize WDK components	
Content Management Foundations Exam (E20-120)					ASSOCIATE
Technical Fundamentals of Documentum Supplemental Materials Virtual Documents, Object and Content Relationships, Advanced DQL, Advanced Alias Sets, Workflow Manager			3 Hours	• Create and manage virtual documents • Describe the different types of object-content relationships • Use DQL statements • Describe alias resolutions • Use Workflow Manager to create workflows	
Technical Fundamentals of Documentum Enterprise Content Management, Managing Content, Working with Content, Working with the Repository, Objects and Types, Users and Privileges, Groups and Roles, Object Security, Searching, Architecture, System Administration Overview, Webtop Presets, Documentum Projects and Alias Sets (Documentum Composer), Custom Types (Documentum Composer), Workflows Templates (Process Builder), Workflows, Lifecycles (Documentum Composer), Virtual Documents, Object and Content Relationships, Alias Resolution, Advanced DQL, Products and Solutions, Supplemental Material:DocApps and Alias Sets (DAB), Custom Types (DAB), Workflows Templates (Workflow Manager), Lifecycles (DAB)	5 Days	5 Days		• Describe the primary components of the Documentum ECM system • Create and manipulate content in the repository, including renditions and virtual documents • Describe how Documentum manages content and metadata • Describe the Documentum object model • Describe the Documentum security model • Configure users, groups, and roles • Create custom object types • Configure workflows, lifecycles, and alias sets • Configure and install a DocApp • Manipulate the Content Server repository through DQL	

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Content Management Systems Administration

System Administrator

This certification track is for Application Developers who develop and customize Content Management-related Web applications using the Documentum Web Development Kit (WDK). Detailed customization examples are presented in the advanced portion of the curriculum.

Courses	Online ILT	Instructor-Led Training	e-Learning	Course Objectives	Levels
Content Management System Administration (E20-465)					SPECIALIST
System Administration for Documentum- Fundamentals Installing Content Server, Documentum System Pre-Installation Tasks, Users and Groups, Documentum End-User Clients, Repository Configurations, Jobs and Methods, Storage Areas, Logging and the Consistency Checker, Full-Text Indexing, Upgrading the Content Server and Components, WDK Application Configuration, Configuring UCF (Unified Client Facilities), DQL and Administration, Authentication, Login Tickets and Application Access Control Tokens, Audit Trail Security, Audit Trail Overview, Method Servers, Federations, Object Replication, CSS (Content Storage Services), Mandatory Access Control, Dump and Load, Encryption, Overview of Distributed Content for Web Clients, Configuring Distributed Content for Web Clients, Monitoring Distributed Content for Web Clients, Full-Text Indexing (Before Content Server 5.3). Backup and Restore/Disaster Recovery	2 Days	2 Days		• Install and configure Content Server • Create and modify users and groups • Configure role-based administration • Explore a variety of Content Server configurations • Set up and run jobs and methods • Set up and manage content storage areas • Install and use index server and an index agent • Perform troubleshooting • Create and use resource agents • Upgrade Content Server and its components • Configure WDK-based applications • Install and configure authentication plug-ins • Configure maximum authentication threshold • Configure a repository to use Login tickets and Application Access Tokens • Create, search, verify, and sign audit trail records • Configure and use the Java Method Server and the dmbasic Method Server • Create a repository federation • Perform object replication • Set up a job sequence • Configure CSS (Content Storage Services) • Use MACL (Mandatory Access Control List) features • Perform dump and load • Install and use ACS (Accelerated Content Services) , BOCS (Branch Office Caching Services), and DMS (Documentum Messaging Services) servers	
Content Management Foundations Exam (E20-120)					ASSOCIATE
Technical Fundamentals of Documentum Supplemental Materials Virtual Documents, Object and Content Relationships, Advanced DQL, Advanced Alias Sets, Workflow Manager			3 Hours	• Create and manage virtual documents • Describe the different types of object-content relationships • Use DQL statements • Describe alias resolutions • Use Workflow Manager to create workflows	
Technical Fundamentals of Documentum Enterprise Content Management, Managing Content, Working with Content, Working with the Repository, Objects and Types, Users and Privileges, Groups and Roles, Object Security, Searching, Architecture, System Administration Overview, Webtop Presets, Documentum Projects and Alias Sets (Documentum Composer), Custom Types (Documentum Composer), Workflows Templates (Process Builder), Workflows, Lifecycles (Documentum Composer), Virtual Documents, Object and Content Relationships, Alias Resolution, Advanced DQL, Products and Solutions, Supplemental Material:DocApps and Alias Sets (DAB), Custom Types (DAB), Workflows Templates (Workflow Manager), Lifecycles (DAB)	5 Days	5 Days		• Describe the primary components of the Documentum ECM system • Create and manipulate content in the repository, including renditions and virtual documents • Describe how Documentum manages content and metadata • Describe the Documentum object model • Describe the Documentum security model • Configure users, groups, and roles • Create custom object types • Configure workflows, lifecycles, and alias sets • Configure and install a DocApp • Manipulate the Content Server repository through DQL	

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Content Management Systems Architecture

Technology Architect

This certification track is for Technology Architects who use EMC Documentum software to design the systems architecture for an Enterprise Content Management solution to meet customer requirements for scalability, performance, high availability, and security.

Courses	Online ILT	Instructor-Led Training	e-Learning	Course Objectives	Levels
Content Management Systems Architecture Exam (E20-475)					SPECIALIST
Architecting EMC Documentum Systems Introduction to Architecture, Platform Architecture Overview, Content Storage Architectures, Content Transfer Architectures, Products and Solutions, Storage Systems, Information Lifecycle Management, Infrastructure Choices, Business Continuity - Backup and Recovery, Business Continuity - High Availability and Disaster Recovery, Designing for Performance, Scaling Documentum Systems, Capacity Planning, Geographically Distributed Systems, Migration and Upgrade, Security, Application Design, Internationalization and Localization, Operational Readiness.	5 Days	5 Days		• Describe topics that should be covered in a comprehensive Content Management System Architecture document • Explain the Documentum platform architecture including detailed explanations of content storage and content transfer • Identify the functionality and appropriate use for Documentum products • Describe network storage components and concepts • Describe the I/O workload characteristics of Documentum system components • Describe techniques for implementing Information Lifecycle Management (ILM) • Define security mechanisms for authentication, access control, and auditing • Describe approaches for insuring business continuity including designs for backup and recovery, disaster recovery, and high availability • Size hardware based on workload characterization, software architecture, and hardware choices • Design architectures for a geographically distributed user base • Configure platform components for multiple languages and locales • Determine application design impact on system architecture • Plan a Documentum upgrade • Develop operational readiness strategies	
Content Management Foundations Exam (E20-120)					ASSOCIATE
Technical Fundamentals of Documentum Supplemental Materials Virtual Documents, Object and Content Relationships, Advanced DQL, Advanced Alias Sets, Workflow Manager			3 Hours	• Create and manage virtual documents • Describe the different types of object-content relationships • Use DQL statements • Describe alias resolutions • Use Workflow Manager to create workflows	
Technical Fundamentals of Documentum Enterprise Content Management, Managing Content, Working with Content, Working with the Repository, Objects and Types, Users and Privileges, Groups and Roles, Object Security, Searching, Architecture, System Administration Overview, Webtop Presets, Documentum Projects and Alias Sets (Documentum Composer), Custom Types (Documentum Composer), Workflows Templates (Process Builder), Workflows, Lifecycles (Documentum Composer), Virtual Documents, Object and Content Relationships, Alias Resolution, Advanced DQL, Products and Solutions, Supplemental Material:DocApps and Alias Sets (DAB), Custom Types (DAB), Workflows Templates (Workflow Manager), Lifecycles (DAB)	5 Days	5 Days		• Describe the primary components of the Documentum ECM system • Create and manipulate content in the repository, including renditions and virtual documents • Describe how Documentum manages content and metadata • Describe the Documentum object model • Describe the Documentum security model • Configure users, groups, and roles • Create custom object types • Configure workflows, lifecycles, and alias sets • Configure and install a DocApp • Manipulate the Content Server repository through DQL	

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Content Management Application Architecture
Technology Architect

This certification track is for Technology Architects who map business requirements into Enterprise Content Management application design using developer tools as well as EMC Documentum application programming interfaces (including DFC, BOF, WDK, and DFS) to design and implement custom business logic.

Courses	Online ILT	Instructor-Led Training	e-Learning	Course Objectives	Levels
Content Management Application Architecture Exam (E20-485)					SPECIALIST
Architecting EMC Documentum Applications Introduction to Application Architecture, Composer, DFC Basics, Designing a Data Model, Testing a Data Model, Object Security - Access Control, Modeling Relationships, Workflows and Lifecycles, Workflow Activity Templates, Designing Business Logic, Server Methods, DFC Best Practices, DFS Service Design Principles, Application Design, TaskSpace Overview, Data Dictionary Awareness, Content Transfer, Performance Analysis Using DFC Trace, Content Capture, Auditing, Search Approaches, Quality Assurance Strategies, The following topics are supplemental. They are provided with the course materials but are usually not covered during the class due to time constraints. WDK Configuration (Supplemental), Search Using DFS, Webtop, and TaskSpace (Supplemental), Signatures (Supplemental)	5 Days	5 Days		• Use Documentum Composer as the environment for building and packaging a Documentum application • Describe data modeling options with Documentum including the performance implications of the underlying database representation for each type of data model • Describe and create different security models in the repository and identify benefits and limitations of each model • Examine approaches to modeling relationships in a Documentum repository including DM_ID, repeating attributes, dm_relationship, virtual documents, and smart containers • Explain Documentum's Business Process Management (BPM) architecture and implement a business process and document lifecycle • Explain options for implementing the business logic tier including business objects, DFS services, and server methods • Describe DFC best practices for session management, transactions, logging, and exception handling • Identify DFS service design and implementation steps and build a custom service • Describe the features and architecture of CenterStage and the Web Development Kit (WDK) framework • Use Documentum Forms and TaskSpace to build an application user interface • List and describe the content transfer mechanisms supported by WDK, the Authoring Integrations, DFC, and DFS • Design approaches for high volume document ingestion using High Volume Server (HVS) and other features • Describe Documentum auditing capabilities and implement a custom audit trail of user searches • Explain search and query approaches including the implications of using FTDQL versus NOFTDQL query processing • Design applications to meet performance and scalability requirements • Describe strategies for assuring application quality	
Content Management Foundations Exam (E20-120)					ASSOCIATE
Technical Fundamentals of Documentum Supplemental Materials Virtual Documents, Object and Content Relationships, Advanced DQL, Advanced Alias Sets, Workflow Manager			3 Hours	• Create and manage virtual documents • Describe the different types of object-content relationships • Use DQL statements • Describe alias resolutions • Use Workflow Manager to create workflows	
Technical Fundamentals of Documentum Enterprise Content Management, Managing Content, Working with Content, Working with the Repository, Objects and Types, Users and Privileges, Groups and Roles, Object Security, Searching, Architecture, System Administration Overview, Webtop Presets, Documentum Projects and Alias Sets (Documentum Composer), Custom Types (Documentum Composer), Workflows Templates (Process Builder), Workflows, Lifecycles (Documentum Composer), Virtual Documents, Object and Content Relationships, Alias Resolution, Advanced DQL, Products and Solutions, Supplemental Material:DocApps and Alias Sets (DAB), Custom Types (DAB), Workflows Templates (Workflow Manager), Lifecycles (DAB)	5 Days	5 Days		• Describe the primary components of the Documentum ECM system • Create and manipulate content in the repository, including renditions and virtual documents • Describe how Documentum manages content and metadata • Describe the Documentum object model • Describe the Documentum security model • Configure users, groups, and roles • Create custom object types • Configure workflows, lifecycles, and alias sets • Configure and install a DocApp • Manipulate the Content Server repository through DQL	

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Purchase Options and Delivery Modes

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Contact Us

Online: http://education.EMC.com

E-mail: EdServices@EMC.com

Phone: 1-888-EMC-TRNG (888-362-8764

International:

APEducation@EMC.com
+61 2 9922 7888 (ANZ)
+65 6333 6200 (South Asia)

EMEA_Education@EMC.com
+44 208 758 6080 (UK)
+49 6196 4728 666 (Germany)

GCEducation@EMC.com
+86 10 8438 6593 (Greater China)

India_Education@emc.com
+91-80-6737-5064 (India)

Japan_Education@EMC.com
+81 44 520 9830 (Japan)

Korea_Education@EMC.com
+82 22125 7750 (Korea)

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01/11 Brochure H1186.17