PARTNER EDUCATION CATALOG

Including EMC Proven Professional Certification

JANUARY 2012

LEVERAGE HANDS-ON LABS... OUTSIDE THE CLASSROOM!

EMC² PROVEN PROFESSIONAL

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)

Updates

IT-as-a-Service - Exam Available this Month

New Exam Requirement for Symmetrix Solutions

Backup Recovery - NetWorker - Video-ILT

Backup Recovery - Avamar - Video-ILT

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Learning Paths

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 Velocity 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 Velocity 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 Velocity 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 VELOCITY 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 cycle for solving customer information infrastructure challenges and deliver value with 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 development selection. Training paths are based on your role (Sales or Technical), and by your Velocity Specialty or Tier.

2012 PARTNER SALES DEVELOPMENT – AFFILIATE TIER

AFFILIATE SALES DEVELOPMENT

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

2012 PARTNER SALES DEVELOPMENT – AFFILIATE ELITE, PREMIERE, & SIGNATURE TIERS

SALES ACCREDITATION (CONSOLIDATE AND BACKUP & RECOVERY or BACKUP & RECOVERY)

For students who were not Sales Accredited in 2011, please select either the Consolidate and Backup & Recovery development or the Backup & Recovery development. Each specialty consists of three (3) tests and requires approximately 8 hours of investment to complete the development.

SALES ACCREDITATION MAINTENANCE (CONSOLIDATE AND BACKUP & RECOVERY or BACKUP & RECOVERY)

For students who have earned a 2011 Sales Accreditation, please select the Maintenance development. The Maintenance development is designed to incrementally update your knowledge about EMC products and solutions throughout 2012.

ISILON SALES FAMILIARIZATION

For students interested in learning about Isilon scale-out NAS products, please review the Isilon development. Because these are familiarization courses, there is no test, and you will not be issued a credential for completing them.

ADVANCED SALES ACCREDITATION

Once you have earned a Sales Accreditation, you now have the opportunity to participate in the Advanced Sales Accreditation program. Designed to enhance your knowledge through true-to-life case study exercises in a live instructor led format, you will learn both traditional & non-traditional approaches on how to discover enhanced opportunities.

2012 PARTNER TECHNICAL DEVELOPMENT– AFFILIATE TIER

AFFILIATE SE DEVELOPMENT

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

AFFILIATE SE MAINTENANCE DEVELOPMENT

For students who have earned a 2011 Affiliate SE Development credential, please select the Maintenance development. The SE Maintenance development will help build upon lessons learned in 2011 with updates on products, messaging and other topics relevant to your market space.

2012 PARTNER TECHNICAL DEVELOPMENT– AFFILIATE ELITE, PREMIERE, & SIGNATURE TIERS

VELOCITY SYSTEMS ENGINEER (CONSOLIDATE or BACKUP & RECOVERY)

The Velocity Systems Engineer development provides a comprehensive technical review of EMC solutions. Consisting of two specialties (Consolidate OR Backup & Recovery), students should take the specialty that aligns with their Velocity compliance requirements.

VELOCITY SYSTEMS ENGINEER MAINTENANCE (CONSOLIDATE or BACKUP & RECOVERY)

For students who have earned a 2011 Velocity Systems Engineer credential, please select the Maintenance development. The Maintenance development is designed to incrementally update your technical knowledge about EMC products and solutions throughout 2012.

ISILON PRE-SALES TECHNICAL FAMILIARIZATION

For students interested in learning about Isilon scale-out NAS products, the Isilon Velocity Systems Engineer familiarization is designed especially for you. Because these are familiarization courses, there is no test, and you will not be issued a credential for completing them.

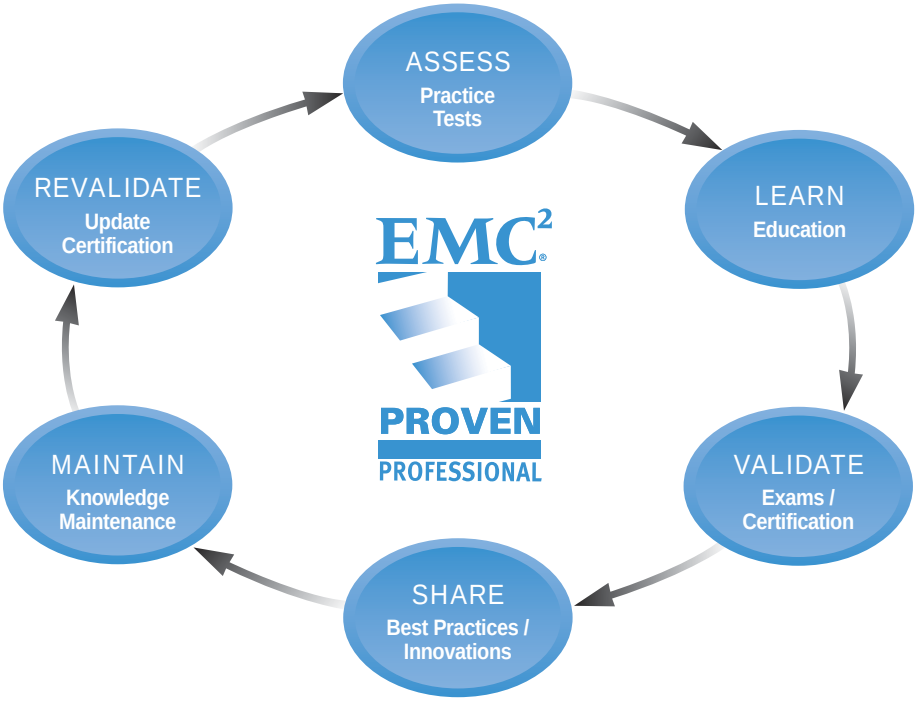
EMC Proven Professional Certification

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



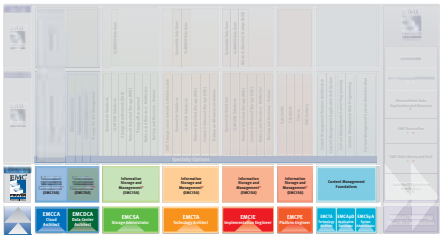
A consistent, measurable means to build and maintain the technical knowledge and skills of information storage and management professionals.

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.

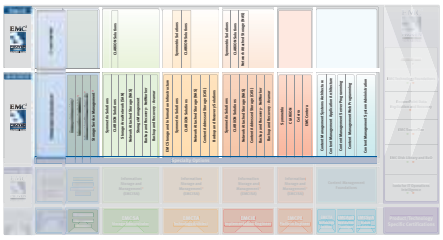
Download the IDC white paper: The Proven Professional Certification - Proving Certification Can Profit http://education.EMC.com/ProvenImpact

EMC Proven Professional Certification Framework



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

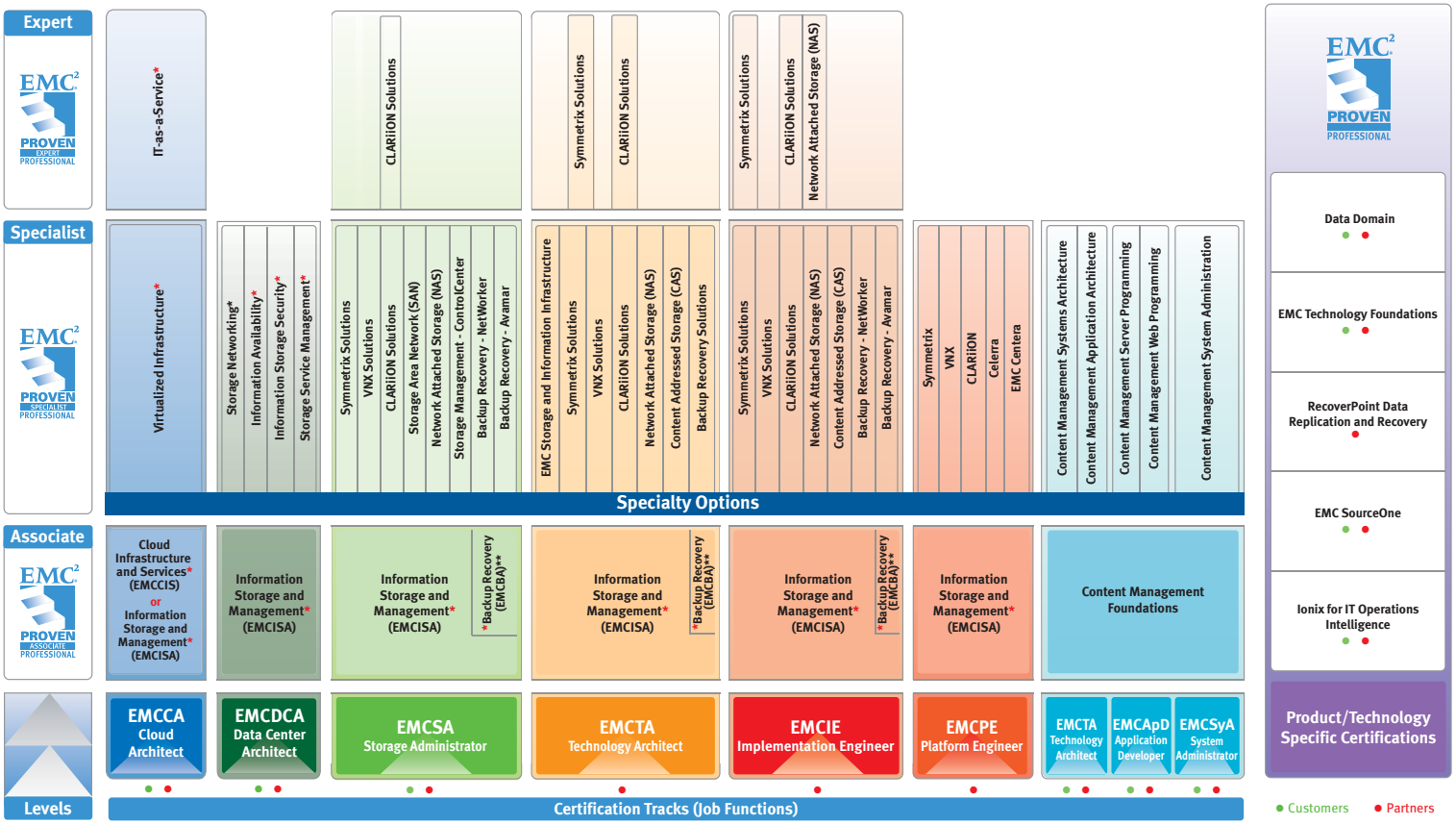
- Develop information storage knowledge and skills that will enable you to respond to the challenges of evolving IT infrastructures. Learn information storage and management concepts and principles that can be applied in many IT scenarios.
- Evaluate and recommend information storage solutions based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



* Unique 'Open' Courses - Content focused on technology concepts, principles, and case studies that can be applied in many IT environments.
** If you are focusing only on Backup Recovery, we recommend pursuing EMCBA. If you are responsible for broader technology domain, pursue EMCISA

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:

Information Storage and Management—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 Velocity 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.

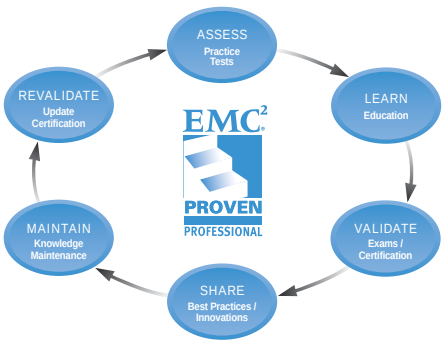
EMC Proven Professional Logo—use on business cards and e-mail signatures.

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.

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
CE-VALPAKSTF $2,700
Contains one Instructor-led course

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

Backup Recovery Systems and Architecture

The Backup Recovery Systems and Architecture Exam is an associate-level qualifying exam for the following EMC Proven Professional Backup Recovery Specialty tracks: Storage Administrator. This exam requires the successful candidate to be able to describe concepts and technologies used in backup and recovery environments. Prepare for your Backup Recovery Associate (EMCBA) Certification.

Courses	Instructor-Led Training	Video - ILT	e-Learning	Course Objectives
Backup Recovery Systems and Architecture Exam (E20-005)				
Backup Recovery Systems and Architecture—Theory	5 Days		1 Hour	• Identify the reasons for backup and recovery • Define common backup and recovery terms • Identify the components of the client/server backup server architecture • Describe the flow of data in client/server backup and restore operations
Backup Recovery Systems and Architecture—Information Storage Concepts - Part 1			1.5 Hours	• Describe disk drive components • Describe the major components of a storage system • Distinguish between storage systems and intelligent storage systems • Describe the various RAID levels and how data is protected by each level • Describe the components of an intelligent storage system • Explain the benefits of direct-attached storage • Describe SCSI architecture
Backup Recovery Systems and Architecture—Information Storage Concepts - Part 2			1 Hour	• Identify Storage Area Network (SAN) components and terminology • Identify Network-Attached Storage (NAS) components and terminology • Describe storage system features used in backup and recovery • Describe Continuous Data Protection
Backup Recovery Systems and Architecture—Client - Part 1			1.5 Hours	• Identify the major sources of backup data • Describe considerations for backing up file system and database data • Describe how data is stored across different types of database applications • Describe how Microsoft VSS is used in backup operations
Backup Recovery Systems and Architecture—Client - Part 2			1.5 Hours	• Describe how data is backed up from file servers • Define NDMP and describe the backup challenges that NDMP addresses • Describe the different forms of virtualization • Describe methods for backing up VMware backup clients • Discuss considerations and challenges impacting client backup environments, including desktop/laptop and remote office clients • Identify factors that impact client backup performance
Backup Recovery Systems and Architecture—Storage Node			1 Hour	• Describe storage node components • Identify the protocols used when writing backup data • Describe the advantages and disadvantages of various types of backup storage media and technologies
Backup Recovery Systems and Architecture—Planning			1.5 Hours	• Describe backup and recovery planning considerations • Describe the importance of backup and recovery testing • Identify backup system disaster recovery considerations • Describe key software and hardware products in EMC's Backup and Recovery Portfolio • Propose a backup and recovery solution

Purchase Options

Backup Recovery Systems eValuePak*
CE-eVALPAKBRS $800

Backup-Recovery Systems & Arch Inst-Led
CE-ILTBRSA $2,700
Contains one Instructor-led course

EMCBA Starter Kit (BRSA VILT)
CE-EPROSTARBA $500
Contains one Video Instructor-led course, and one Proven Professional exam voucher

*Partner ValuePaks will contain the Backup Recovery e-Learning modules when the choice within associate level certification is applicable, eliminating the need to purchase the package separately.

Cloud Infrastructure and Services (CIS)

Cloud Architect

Gain the skills needed to make informed decisions on migrating to the cloud. Cloud Infrastructure and Services (CIS) is an 'open' course that covers the principles and concepts of virtualization and cloud Infrastructure technologies. The course is ideal for gaining a broad understanding of the transition from classic data center, to virtualized data center, to the cloud.

Prepare for your Cloud Infrastructure and Services Associate (EMCCIS) Certification.

Courses	Video Instructor-Led Learning	Instructor-Led Training	e-Learning	Course Objectives	Levels
				Cloud Infrastructure and Services Exam (E20-002)	
Cloud Infrastructure and Services Journey to the Cloud, Classic Data Center (CDC), Virtualized Data Center (VDC) – Compute, Storage, Networking, Desktop and Application, Business Continuity in VDC, Cloud Computing Primer, Cloud Infrastructure and management, Cloud Security, Cloud Migration Considerations				• Explain the phases of transition from classic data center to virtual data center and then to the cloud • Describe virtualization technology at compute, storage, network, desktop, and application layers of IT infrastructure • Describe business continuity solutions in a VDC environment • Explain the key characteristics, services, and deployment models of cloud • Describe the cloud infrastructure components and service management processes • Recall the cloud security concerns and solutions • List the key considerations for migration to the cloud	ASSOCIATE

Purchase Options

Cloud Infrastructure and Services VILT
$1,600
Includes one Video-ILT.

For details on purchase options see page 74.

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)					
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	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. 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

Storage Networking EMCDCA ValuePak
CE-EMCDCASNDM $5,000
Contains one Instructor-led course

Storage Networking EMCDCA Video ValuePak
CE-VIDVPKSNDM $2,000
Includes one Video-ILT, EMCPP Starter Kit, and two exam vouchers.

For details on purchase options see page 74.

Information Availability
Data Center Architect

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.

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

Information Availability EMCDCA ValuePak
CE-EMCDCAIADM $5,000
Contains one Instructor-led course

Information Availability EMCDCA VideoPak
CE-VIDVPKIA $3,000 or (30 TU)

Information Storage and Management eValuePak
CE-eVALPAKSTF $800

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

For details on purchase options see page 74.

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.

Courses	Online ILT	Instructor-Led Training	e-Learning	Video Instructor-Led Learning	Course Objectives	Levels
Information Storage Security Exam for Data Center Architects (E20-021)						
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			• 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 reporting weaknesses • List the key areas of data loss prevention • List common characteristics of digital forensics when working with storage subsystems	SPECIALIST
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	
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 network protocols and services 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 • 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)						
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

Info. Storage Security EMCDCA ValuePak
CE-VALPAKDSS $5,500
Includes one Instructor-Led or one Online ILT and six self-paced e-Learning courses

Info. Stor. Secur. EMCDCA Video ValuePak
CE-VIDVPKSDSS $2,000
Includes one Video-ILT, EMCPP Starter Kit, and two exam vouchers.

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.

Courses	Video Instructor-Led Learning	Instructor-Led Training	e-Learning	Course Objectives
Storage Services Management Specialist Exam for Data Center Architects (E20-022)				
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 Foundations Certification Course Concepts, terms, definitions, objectives, relationships, and benefits within the core ITIL 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 processes, roles, and functions • Describe ITIL technology and architecture • Explain the ITIL 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
Tiered Information Services Trends and Strategies Clarifying tiered information services, challenges to establishing tiered information services, opportunities to leverage tiered information services			2 Hours	• Describe tiered information services, and how it benefits both the business and IT organization • List common challenges to organizations implementing a tiered information services strategy • Describe how major information infrastructure trends and the business perspective can more accurately address challenges to tiered information services • Identify opportunities to leverage tiered information services for businesses and their IT organizations • Use tools to analyze business perspectives that could influence the implementation of tiered information services
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

Purchase Options

Storage Service Mgmt EMCDCA ValuePak
CE-VALPAKITIL $5,500
Includes one Instructor-Led, one Video-ILT, and two e-Learning courses.

Storage Serv. Mgmt EMCDCA Video ValuePak
CE-VIDVPKSSM $2,000
Includes two Video-ILTs, EMCPP Starter Kit, and two exam vouchers.

ITIL Foundations Certification Course
CE-VILTITILF $1,000
Includes one Video-ILT

For details on purchase options see page 74.

Virtualized Infrastructure
Cloud Architect

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)					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 Infra. EMCCA ValuePak
CE-VALPAKVI $5,000
Contains Instructor-Led course

Virtualized Infra. EMCCA Video ValuePak
CE-VIDCPKVI $3,000
Includes one Video-ILT, EMCPP Starter Kit, and two exam vouchers.

For details on purchase options see page 74.

IT-as-a-Service Planning and Design
Cloud Architect

Become an IT professional who demonstrates cross-domain expertise and focus on designing cloud-based IT service solutions that drive business transformations for the enterprise and service provider organizations. This course is for those assessing, architecting, and designing IT-as-a-Service solutions as part of the transformation and optimization of virtual data centers into cloud-based IT-as-a-Service environments.

Prepare for your Expert-level Cloud Architect Certification.

Courses	Video Instructor-Led Learning	Instructor-Led Training	e-Learning	Course Objectives
IT-as-a-Service Expert Exam for Cloud Architects (E20-918)				
IT-as-a-Service Planning and Design Transforming to IT-as-a-Service, strategy—discover & assessment, organization and governance, planning and design: general considerations, planning and design: cloud building blocks, planning and design: trust and security, planning and design: service lifecycle, planning and design: cloud application design and futures		5 Days		• Describe the IT-as-a-Service business transformational model • Perform an IT-as-a-Service assessment and propose a service delivery roadmap • Recommend and design an IT-as-a-Service service delivery model • Design and defend an IT-as-a-Service solution

Levels: EXPERT

Purchase Options

IT-as-a-Service Planning and Design Video-ILT
$3,000 or (30 TU)
Includes one Video-ILT.

IT-as-a-Service Planning and Design Instructor-Led
$5,000 or (50 TU)
Includes one Instructor-Led course.

For details on purchase options see page 74.

Backup 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 Recovery Solutions.

Courses	Online-ILT	Instructor-Led Training	Video Instructor-Led Learning	e-Learning	Course Objectives	Levels
Backup Recovery Specialist Exam For Storage Administrators (E20-597)						SPECIALIST
EMC NetWorker Installation, Configuration and Administration EMC NetWorker overview, installing NetWorker and NetWorker management console, NetWorker resources and administrative interfaces, performing backups, NetWorker media management, configuring and managing libraries, configuring and managing standalone devices, NetWorker database management, performing cloning and staging, administering the NetWorker server, administering the NetWorker management console server, performing recoveries, recovering a NetWorker server, backing up VSS and cluster environments	5 Days	5 Days			• Install NetWorker and NetWorker Management Console • Use NetWorker resources and administrative interfaces • Perform and Customize backups • Manage NetWorker media • Configure and manage libraries and standalone devices • Manage NetWorker databases • Perform cloning and staging of save sets • Administer the NetWorker and Management Console server and generate reports • Perform recoveries of client data • Describe how to back up and recover in VSS and cluster environments	
EMC NetWorker Overview EMC NetWorker Foundations, Architecture, Backups, Recoveries				1 Hour	• Describe the EMC NetWorker solution and advantages • Describe NetWorker hosts and their roles • Describe the use of NetWorker control data and administrative interfaces • Describe NetWorker device types and devices, backup process, types, and levels,recovery process and recovery types	
EMC NetWorker Modules Overview Introduction to NetWorker Modules, NetWorker Module Architecture, Database Application Modules, NetWorker Modules for Microsoft Applications, Other NetWorker Application Modules, NetWorker Snapshot Modules				1 Hour	• Describe the EMC NetWorker Module solution • List the advantages of employing EMC NetWorker modules • Explain the NetWorker module architecture • Describe the functionality of each of the NetWorker modules	
AND **Backup Recovery Systems and Architecture Exam (E20-005)**						ASSOCIATE
Backup Recovery Systems and Architecture Backup Theory, Information Storage Concepts, Backup Client, Backup Storage Node, Backup and Recovery Planning				8 Hours	• Describe backup and recovery terminology and operations • Describe various types of storage systems, concepts and components • Identify major sources of backup data • Describe the different types of backup storage media, their advantages and disadvantages	
OR* **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

Backup and Recovery ValuePak
CE-VALPAKBR $5,500
Contains Instructor-Led

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

Backup Recovery Systems eValuePak
CE-eVALPAKBRS $800
Contains e-learning.

Expert Level Knowledge

EMC NetWorker Microsoft Applications Implementation and Management
50 TU Online ILT 5 Days

This course explores EMC NetWorker Module for Microsoft Applications, release 2.3, installation, configuration, backup and recovery. 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 Database 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.

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.

Backup Recovery - Avamar Learning Path
Storage Administrator

EMC² PROVEN PROFESSIONAL

Benefits any storage professional who deploys and manages data deduplication technology using EMC Avamar. You will learn to configure EMC Avamar® in backup and recovery environments to reduce storage, network and other backup resource requirements.

Courses	Video Instructor-Led Learning	Instructor-Led Training	e-Learning	Course Objectives	Levels
Backup Recovery - Avamar Specialist Exam for Storage Administrators (E20-598)					
EMC Avamar Administration Avamar fundamentals, Avamar administration, Avamar backups, Avamar restores, using enterprise manager and replication, system monitoring and maintenance, logs, troubleshooting, and reporting		3 Days		• Describe the Avamar advantage over traditional backup systems • Define Avamar terminology • Describe Avamar system components and processes • Describe the Avamar deduplication backup process • Install Avamar Administrator and Client software • Create a group policy • Run on-demand backups from the Avamar Administrator and Avamar Client interfaces • Restore files using Avamar Administrator and client interfaces • Describe the types of Avamar replication and configure Avamar standard replication • Configure and use Avamar Activation Manager and Desktop/Laptop interfaces • Describe Avamar server daily maintenance activities: checkpoints, HFS checks, and garbage collection • Use Avamar tools to perform system monitoring, maintenance, capacity management, and troubleshooting	SPECIALIST
EMC Avamar Overview Avamar fundamentals, Avamar backups and restores, maintaining, monitoring, and reporting			2 Hours	•Describe Avamar features and architecture • Describe the Avamar backup and restore process • Explain how to perform backups and restores • Describe Avamar maintenance activities • Describe Avamar monitoring and reporting capabilities	
EMC Avamar Virtual Edition Overview EMC Avamar fundamentals, EMC Avamar editions, EMC Avamar virtual edition installation			1 Hour	• Describe EMC Avamar features and architecture • Discuss EMC Avamar server configurations • Describe EMC Avamar Virtual Edition solution installation • Discuss differences between EMC Avamar Virtual Edition and Data Store Edition	
AND **Backup Recovery Systems and Architecture Exam (E20-005)**					
Backup Recovery Systems and Architecture Backup Theory, Information Storage Concepts, Backup Client, Backup Storage Node, Backup and Recovery Planning			8 Hours	• Describe backup and recovery terminology and operations • Describe various types of storage systems, concepts and components • Identify major sources of backup data • Describe the different types of backup storage media, their advantages and disadvantages	ASSOCIATE
OR* **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

EMC Avamar Administration ValuePak
CE-AVAXIADMIN $3,300
Contains Instructor-Led

EMC Avamar Administration Video ValuePak
CE-VIDVPKAV $1,800
Contains Video-ILT

Backup Recovery Systems and Architecture
CE-TU0050 $5,000
Contains Instructor-Led

For details on purchase options see page 74.

VNX Solutions
Storage Administrator

EMC² PROVEN PROFESSIONAL

Benefits storage professionals deploying and managing VNX Unified Storage in a Windows, Linux or VMware ESXi environment. Improve performance and boost storage efficiency using FAST SUITE. Implement any-point-in-time recovery capability for production applications using LOCAL PROTECTION SUITE of software.

Courses	Online Instructor-Led	Instructor-Led Training	Video Instructor-Led Learning	e-Learning	Course Objectives	Levels
VNX Solutions Specialist Exam for Storage Administrators (E20-547)						SPECIALIST
VNX Unified Storage Deployment and Management This course provides participants with hands on experience integrating VNX block access for open systems hosts (Linux, Windows and VMware ESXi) through FC, iSCSI and, FCoE connectivity options. In addition, VNX file level access will be configured for Windows, Unix and VMware user/application environments via NFS, pNFS, and CIFS environments. This course will cover implementation of local replication solutions supported by hands-on activities	5 Days	5 Days			This intensive training covers all the key elements of SAN/IP-SAN (block access) and NAS (file access) deployment. • Unisphere Security and Basic Management • Block Storage Provisioning and Management • Managing Host Access to Block Storage • Host Installation and Integration - Windows, Linux and VMware ESXi • Network Configuration and File Systems configuration (UNIX, Windows, and ESXi) • Configuring and managing FAST Virtual Provisioning capabilities • Managing Permissions in CIFS only (Windows only) environment • Virtual Data Movers, File System Quotas, and additional CIFS Features • Configuring Event Monitor and Alerts • Concepts and Principles of VNX SnapView and VNX SnapSure • Configure VNX SnapView Snapshots, Clones and VNX SnapSure	
VNX Foundations Overview of VNX Family and Software Suites and Packs, VNX and VNXe Architecture and Theory of Operations, VNX Storage System Features, Storage Object Management with Unisphere, Managing SAN Copy				2.5 Hours	• Describe the architecture, terminology and key features of the VNX and VNXe series platforms and VNX VG2 and VG8 gateways • Identify VNX Family Data Integrity and availability features, as well as VNX family management options and storage objects	
VNX Local Protection Suite Local Protection Suite Components, VNX SnapView, VNX SnapSure, RecoverPoint/SE CDP, VNX Local Protection Suite Use Cases				2.5 Hours	• Identify VNX SnapView and SnapSure architecture, functions and theory of operation • Identify RecoverPoint/SE CDP architecture, functions and theory of operation	
VNX Remote Protection Suite VNX Remote Protection Suite, VNX MirrorView, VNX Replicator & RecoverPoint/SE CRR				2.5 Hours	• Describe VNX MirrorView/S and MirrorView/A architecture, theory of operation, and features • Describe VNX Replicator & RecoverPoint/SE CRR architecture, theory of operation, and features	
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	
VNX Application Protection Suite Replication Manager – overview and features & functionality, Data Protection Advisor – overview and features & functionality				1 Hour	• Identify Replication Manager architecture, functions and theory of operations • Identify Data Protection Advisor – Replication Analysis architecture, functions and theory of operations	
VNX Block Storage Provisioning Using Unisphere Wizard Creating and allocating block-level storage				1 Hour	• Use Unisphere wizards to create LUNs and assign them to an open systems host through a block-level SAN interface	
VNX File Provisioning using Installation Wizard Creating and exporting/sharing file systems				1 Hour	• Use Unisphere wizards to create file systems and assign them to an open systems host through a file-level network interface	
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 and Management eValuePak
CE-eVALPAKSTF $800

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

VNX Solutions (FAST, LOCAL PROTECTION) ValuePak
CE-VALPAKVNX $5,500
Contains Instructor-Led

VNX Solutions Video ValuePak
CE-VIDVPKVNX $3,000
Includes one Video-ILT

Ionix for Storage Resource Management (ControlCenter)

Storage Administrator

EMC² PROVEN PROFESSIONAL

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.

Courses	Video Instructor-Led Learning	Instructor-Led Training	e-Learning	Course Objectives
Storage Management Specialist Exam for Storage Administrators (E20-582)				
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
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 SRDF connections and configurations, modes of operation and SRDF family options, SRDF management software and basic operations			2 Hours	• Explain SRDF management software offerings and recovery operations • Identify and differentiate the SRDF family of products • Describe management considerations for deployment of SRDF
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 platforms and architecture, Symmetrix I/O operations and volume types, Symmetrix features and management			2 Hours	• Enumerate benefits of Symmetrix arrays • Describe Symmetrix features and management software tos
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

Purchase Options

Information Storage and Management eValuePak
CE-eVALPAKSTF $800

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

Control Center ValuePak
CE-VALPAKCC $5,500
Contains Instructor-Led

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

For details on purchase options see page 74.

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, 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.

Courses	Video Instructor-Led Learning	Instructor-Led Training	e-Learning	Course Objectives	Levels
Storage Area Network (SAN) Specialist Exam For Storage Administrators (E20-532)					
SAN Management Overview, MDS-Series Switch Tools, B-Series Switch Tools, SAN Management, Fabric Configuration, EMC ControlCenter SAN Manager, Interoperability Management, Troubleshooting		4 Days		• Perform basic management and configuration tasks on B-Series and MDS-Series • Configure SAN switches for NPIV and NPVs • Configure and manage VSANs and Virtual Fabrics • Create and manage zoning • Allocate storage from an EMC array • Describe the components of a Fibre Channel fabric • Merge multiple switches into a single fabric • Configure a Bridged iSCSI SAN • Demonstrate zoning and storage allocation operations using SAN Manager • Configure switches for interoperability • Troubleshoot tools used for SAN Management	SPECIALIST
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 Switch Architecture & 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 platforms and architecture, Symmetrix I/O operations and volume types, Symmetrix features and management			2 Hours	• Enumerate benefits of Symmetrix arrays • Describe Symmetrix features and management software tos	
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.					ASSOCIATE

Purchase Options

Information Storage and Management eValuePak
CE-eVALPAKSTF $800

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

SAN ValuePak
CE-VALPAKSAN $4,400
Contains Instructor-Led

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

For details on purchase options see page 74.

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 Implementation and Configuration
4 TU e-Learning 1.25 Hours

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

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.

Courses	Video Instructor-Led Learning	Instructor-Led Training	e-Learning	Course Objectives	Levels
Network Attached Storage (NAS) Specialist Exam For Storage Administrators (E20-538)					
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 (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 $5,500
Contains Instructor-Led

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

For details on purchase options see page 74.

Expert Level Knowledge

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 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.

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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.

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.

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 Management TimeFinder/Clone operations, TimeFinder/Snap operations, SRDF/Synchronous operations, SRDF/Asynchronous operations, SRDF/AR – automated replication, Open Replicator for Symmetrix operational details		5 Days	5 Days		• Describe and perform TimeFinder/Clone and TimeFinder/Snap operations • Describe and perform SRDF operations in Synchronous (SRDF/S) and Asynchronous (SRDF/A) modes using SYMCLI and SMC • Describe and perform SRDF/Automated Replication (SRDF/AR) operations • Describe and perform Open Replicator for Symmetrix (ORS) data replication in Hot/Cold, Push and Pull scenarios	SPECIALIST
Symmetrix Performance Analyzer (SPA) Fundamentals Installation, options and environment variables, gatekeeper management, Solutions Enabler Daemons				1.5 Hours	• Perform Symmetrix configuration and replication tasks with SMC • Articulate the differences between SMC and the Solutions Enabler command line interface (SYMCLI)	
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 and Federated Live Migration Fundamentals Open Replicator fundamentals, overview of Federated Live Migration				2 Hours	• List Open Replicator actions and the commonly used options • Provide an overview of Federated Live Migration (FLM)	
SRDF Foundations SRDF connections and configurations, modes of operation and SRDF family options, SRDF management software and basic operations				2 Hours	• Explain SRDF management software offerings and recovery operations • Identify and differentiate the SRDF family of products • Describe management considerations for deployment of SRDF	
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 Symmetrix configuration and device masking overview, device creation and mapping, Symmetrix and device attributes, auto-provisioning, virtual LUN technology, virtual provisioning concepts and planning, virtual provisioning with Solutions Enabler, monitoring thin pools and using symaudit, configuring with Symmetrix Management Console, FAST theory and practice, FAST implementation using SYMCLI, implementing and managing FAST using SMC.		5 Days	5 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 platforms and architecture, Symmetrix I/O operations and volume types, Symmetrix features and management				2 Hours	• Enumerate benefits of Symmetrix arrays • Describe Symmetrix features and management software tos	
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) 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 $5,500
Contains Instructor-Led or Online-ILT

Symmetrix Management Video ValuePak
CE-VIDVPKSMGT $3,000
Contains Video-ILT

Symmetrix Business Continuity ValuePak
CE-VALPAKBC $5,500
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/Online ILT 4 Days

This course analyzes the performance of Symmetrix DMX and VMax-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/Online ILT 5 Days

This instructor led, course provides students with opportunity to acquire hands-on experience integrating EMC Symmetrix VMax 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 VMax 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.

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.

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 Security and Basic Management, 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, Unisphere Analyzer, Unisphere Quality of Service Manager, 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 Unisphere and other components of the Unisphere suite • 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)				
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

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 $5,500
Contains one Instructor-led

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

For details on purchase options see page 74.

Expert Level Knowledge

CLARiiON Remote Replication Advanced Workshop
30 TU ILT/Online ILT 3 Days

This expert level workshop focuses on the deployment of CLARiiON Replication Software in a FLARE 30 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/Online 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:

CLARiiON Integration with Microsoft Exchange Server Workshop
30 TU ILT/Online ILT 3 Days

This course focuses on the deployment of Exchange 2010 in a FLARE 30 CLARiiON environment. Learn how to design and implement CLARiiON storage arrays to support a VMware vSphere virtualized infrastructure hosting an enterprise-level Exchange Server 2010 environment. Use-case scenarios and best practices centered on choosing RAID types, CLARiiON Thin Provisioning, VMware VMFS, VMware iSCSI, and RDM disk layouts will be considered.

OR

CLARiiON Integration with SQL Server Workshop
30 TU ILT/Online ILT 3 Days

This expert level workshop focuses on the deployment of SQL Server in a FLARE 30 CLARiiON environment. Learn the best practices to implementing SQL Server on an CLARiiON storage array, such as spindle count, RAID configuration, and database layout. Also considered is local replication and recovery using EMC Replication Manager 5.x, including database DR. Finally, remote replication solutions – both synchronous as well as point in time – will be covered using such EMC technologies as MirrorView, SanCopy, and RecoverPoint.

CLARiiON Solutions Expert Exam for Storage Administrators

EXAM E20-822

Additional Training

VMware vSphere Integration with CLARiiON
50 TU ILT/Online 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.

Introduction to 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 Recovery Solutions Specialty
Technology Architect

For any EMC Velocity 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.

Courses	Video Instructor-Led Learning	Instructor-Led Training	e-Learning	Course Objectives	Levels
				Technology Architect Backup 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 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	
AND				**Backup Recovery Systems and Architecture Exam (E20-005)**	ASSOCIATE
Backup Recovery Systems and Architecture Backup Theory, Information Storage Concepts, Backup Client, Backup Storage Node, Backup and Recovery Planning			8 Hours	• Describe backup and recovery terminology and operations • Describe various types of storage systems, concepts and components • Identify major sources of backup data • Describe the different types of backup storage media, their advantages and disadvantages	
OR*				**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

EMCTA-BR Solutions Self-Paced PARTNERS ONLY
CE-VALTABRSOL $1,200
Contains associate level*, two Video-ILT's, and three Proven Professional Exam vouchers.
* Choose between Information Storage and Management course, or Backup Recovery Systems and Architecture course.

EMCTA-BR Solutions Instructor-Led PARTNERS ONLY
CE-ILTA-BRSOL $4,000
Contains associate level*, two Instructor-led courses, and three Proven Professional Exam vouchers.
* Choose between Information Storage and Management course, or Backup Recovery Systems and Architecture course.

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.

EMC NetWorker Microsoft Applications Implementation and Management
50 TU Online ILT 5 Days
This course explores EMC NetWorker Module for Microsoft Applications, release 2.3, installation, configuration, backup and recovery. Prior knowledge of EMC NetWorker software is a prerequisite as this course only focuses on the NetWorker Module for Microsoft Applications.

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.

Data Protection Advisor Custom Reporting
20 TU Online ILT 2 Days
This course teaches participants how to build custom reports with Data Protection Advisor, using DPA data sources and external data sources, operators, query nodes and external alerts. Pre-requisite DPA implementation and management exposure is mandatory as this course takes a deeper dive into the custom reporting subject.

EMC NetWorker Module for Database 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.

EMC NetWorker Module for SAP R/3 with Oracle
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 De-Duplication
2 TU e-Learning 2 Hours
This course provides participants with the knowledge necessary to configure and manage NetWorker de-duplication backups.

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.

Courses	Video Instructor-Led Learning	Instructor-Led Training	e-Learning	Course Objectives	Levels
Technology Architect Design Solutions Exam (E20-322)					
Solutions Design Concepts ValuePak V5 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)**			24 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	SPECIALIST
Network Attached Storage (NAS) Specialist Exam for Technology Architects (E20-540)					
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	SPECIALIST
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)					
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

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

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

Expert Level Knowledge

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 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 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.

Solutions Design Concepts ValuePak V5

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 V5
- Data Archiving Solutions Design Concepts V5
- Data Migration Solutions Design Concepts V5
- Information Security Solutions Design Concepts V5
- Exchange and SQL Server Solutions Design Concepts V5
- Oracle Solutions Design Concepts V5
- SAN Solutions Design Concepts V5 - Part 1
- SAN Solutions Design Concepts V5 - Part 2
- Storage Management Solutions Design Concepts V5
- Symmetrix Solutions Design Concepts V5
- Virtualization Solutions Design Concepts V5
- Virtualization Solutions Design Concepts V5 - Part 2
- VNX for Block Solutions Design Concepts V5
- VNX for File Solutions Design Concepts V5

Symmetrix Solutions Technology Architect

For any EMC Velocity 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
Symmetrix Solutions Design Exam for Technology Architects (E20-326)						
Symmetrix Solutions Design Procedures, methodologies and tools for designing Symmetrix Solutions, local and remote replication, best practices to guide and validate Symmetrix systems		5 Days		5 Days	• Gather information and use best practices required to design a Symmetrix solution • Design solutions with Symmetrix, FAST/FAST VP, Local Replication using EMC TimeFinder products, Open Replicator Solutions, Remote Replication using SRDF	SPECIALIST
Business Continuity Solutions Designer (BCSD) for Symmetrix SRDF Overview of BCSD application, its purpose, software pre-requisites, download/install process, usage, and modeling an SRDF solution			1 Hour		• Identify purpose of BCSD application, its software requirements, required access and support resources, download and install process • Identify BCSD input information requirements • Describe how BCSD models an SRDF solution	
Symmetrix Solutions Specialist Exam for Technology Architects (E20-515)						
Symmetrix Infrastructure Solutions Symmetrix Configuration and Device Masking Overview, Device Creation and Mapping, Symmetrix and Device Attributes, Virtual Provisioning Concepts, Planning and Operations Autoprovisioning Groups, Virtual Provisioning Miscellaneous Operations, Virtual LUN Migration, FAST and FAST VP Concepts, Implementing and Managing FAST/FAST VP using SYMCLI and SMC, TimeFinder/Clone Operations, TimeFinder/Snap Operations, SRDF/Synchronous Operations, SRDF/Asynchronous Operations		5 Days		5 Days	• Create and Map Symmetrix Devices, describe how to set Symmetrix Metrics and Device Attributes • Manage Dynamic RDF and Device Pools, and Virtual Provisioning • Map and Mask Devices using Autoprovisioning • Migrate devices non-disruptively using Virtual LUN Migration • Explain, configure and manage FAST and FAST VP • Describe and perform TimeFinder/Clone and TimeFinder/Snap operations, SRDF operations in Synchronous (SRDF/S) and Asynchronous (SRDF/A) modes	SPECIALIST
Symmetrix Performance Analyzer Fundamentals SPA Overview, Documentation and Installation, Administration, and Usage			2 Hours		• Install and configure SPA, explain user interface controls of SPA • Perform administrative tasks • Utilize Dashboard, Diagnostic, Snapshot, Trend, and Real Time views	
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	
Open Replicator & Federated Live Migration Fundamentals Open Replicator Fundamentals, Overview of Federated Live Migration			1 Hour		• Describe the methods used to zone and mask the controlling Symmetrix and the remote array • Compare Open Replicator with SRDF and provide overview of Federated Live Migration (FLM)	
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	
PowerPath Foundations PowerPath terminology, features, architecture, theory of operations and management			1 Hour		• 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 (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.						ASSOCIATE

Purchase Options

EMCTA Symm. Solutions Self-Paced PARTNERS ONLY
CE-VALTA-SBC $1,200
Contains associate level, two Video-ILT courses, nine 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
Contains associate level, as well as two Instructor-Led or Online-ILTs, nine 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/Online ILT 4 Days

This course analyzes the performance of Symmetrix DMX and VMax-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 VMax 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 VMax array. Students will learn the benefits of migrating SQL Server databases from direct-attached storage to a Symmetrix VMax 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/Online ILT 5 Days

This instructor led, course provides students with opportunity to acquire hands-on experience integrating EMC Symmetrix VMax 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 VMax 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.

Solutions Design Concepts ValuePak V5

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 V5
- Data Archiving Solutions Design Concepts V5
- Data Migration Solutions Design Concepts V5
- Information Security Solutions Design Concepts V5
- Exchange and SQL Server Solutions Design Concepts V5
- Oracle Solutions Design Concepts V5
- SAN Solutions Design Concepts V5 - Part 1
- SAN Solutions Design Concepts V5 - Part 2
- Storage Management Solutions Design Concepts V5
- Symmetrix Solutions Design Concepts V5
- Virtualization Solutions Design Concepts V5
- Virtualization Solutions Design Concepts V5 - Part 2
- VNX for Block Solutions Design Concepts V5
- VNX for File Solutions Design Concepts V5

VNX Solutions
Technology Architect

For EMC Velocity Partners who design and architect unified storage solutions using the EMC VNX Series storage platform. This certification aligned curriculum offers knowledge, Lab experiences and formal recognition required for a credible pre-sales technical architect to design and architect EMC VNX Series Block (FC, iSCSI and FCOE) and File (NFS, pNFS and CIFS) based storage solutions in heterogeneous virtualized open systems environments. This includes VNX Series product knowledge as well as the tools and best practices to gather, analyze, design, and propose a solution that fully leverages the capabilities of the VNX Series and its reliability and performance to meet a customer's complex storage needs.

Courses	Video Instructor-Led Learning	Instructor-Led Training	e-Learning	Course Objectives	Levels
VNX Solution Design Exam for Technology Architects (E20-324)					SPECIALIST
VNX Unified Storage Solutions Design This Specialist level course provides participants with a select view of VNX series systems, highlighting factors that are critical to approaching and executing the design process. The course explores design considerations for VNX series systems, focusing on important data to gather, analyze, and interpret when designing VNX series solutions for customers. Participants will also learn recommended best practices to both guide and validate designs for VNX series systems for specific applications and virtual server environments as well as for local and remote business continuity. The course concludes with a practical solutions design case study that will validate the participants knowledge.	✓	5 Days		• Gathering information on the current environment and customer requirements • Use tools to analyze the current environment as a baseline for designing a solution • Understand best practices for designing a VNX series solution in Microsoft Exchange, SQL Server and virtualized server environments (VMware, Xen, HyperV) • Use tools and best practices to design Block-only, File-only and Unified solutions based on the customers' expectations for capacity, performance, availability etc. • Understand and use best practices for designing VNX series business continuity solutions for Local (SnapView, Snapsure, RPSE/CDP) and Remote replication (MirrorView, VNX Replicator, RP/SE CRR)	
VNX Solutions Specialist Exam for Technology Architects (E20-545)					SPECIALIST
VNX Unified Storage Infrastructure Solutions This Specialist level course provides participants with an understanding of the EMC VNX Series unified storage platform. Configuring and managing EMC VNX Series unified storage systems in a Block (FC, iSCSI, FCoE) and File (NFS, pNFS, CIFS) environment with practical lab exercises. Understanding how the VNX Series features and technologies can be used to solve customer problems. Describe key considerations in using the VNX Series features to meet customer requirements.	✓	5 Days		• Experience configuration and integration of a VNX storage system into an open systems host environment • Understand deployment in a Block (FC, iSCSI, FCoE) and File (NFS, pNFS, CIFS) environment • Understand how the VNX Series features can be used solve customer problems • Describe key considerations in using VNX Series features • Know how the VNX Local Protection Suite features can be used and managed	
VNX Foundations Overview of VNX Family and Software Suites and Packs, VNX and VNXe Architecture and Theory of Operations, VNX Storage System Features, Storage Object Management with Unisphere, Managing SAN Copy			2.5 Hours	• Describe the architecture, terminology and key features of the VNX and VNXe series platforms and VNX VG2 and VG8 gateways • Identify VNX Family Data Integrity and availability features, as well as VNX family management options and storage objects	
VNX Local Protection Suite Local Protection Suite Components, VNX SnapView, VNX SnapSure, Recover-Point/SE CDP, VNX Local Protection Suite Use Cases			2.5 Hours	• Identify VNX SnapView and SnapSure architecture, functions and theory of operation • Identify RecoverPoint/SE CDP architecture, functions and theory of operation	
VNX Remote Protection Suite VNX Remote Protection Suite, VNX MirrorView, VNX Replicator & RecoverPoint/ SE CRR			2.5 Hours	• Describe VNX MirrorView/S and MirrorView/A architecture, theory of operation, and features • Describe VNX Replicator & RecoverPoint/SE CRR architecture, theory of operation, and features	
VNX Application Protection Suite Replication Manager – overview and features & functionality, Data Protection Advisor – overview and features & functionality			1 Hour	• Identify Replication Manager architecture, functions and theory of operations • Identify Data Protection Advisor – Replication Analysis architecture, functions and theory of operations	
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-VNX Sol Self-Paced Partners ONLY

CE-SPTA-VNX $1,200

Contains associate level, as well as two Video-ILT's, four e-Learning and three Exam vouchers. .

EMCTA-VNX Sol. Inst.-Led PARTNERS ONLY

CE-VALTA-VNX $4,000

Contains associate level, as well as two Instructor-Led or Online-ILT classes, four e-Learning and three Exam vouchers.

Content-Addressed Storage (CAS)—Learning Path

Technology Architect

For any EMC Velocity 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.

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 V5 Compilation of e-Learning courses: Critical information for the gathering, analysis and design of specific information storage and management technologies				24 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	SPECIALIST
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	
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 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.		3 Days (5 days)		20 Hours (20 hours) (4 e-Learning modules)		

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

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

CLARiiON Solutions Learning Path
Technology Architect

For any EMC Velocity 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.

Courses	Video Instructor-Led Learning	Instructor-Led Training	e-Learning	Course Objectives	Levels
Technology Architect Solutions Design Exam (E20-322)					
Solutions Design Concepts ValuePak V5 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)**			24 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	SPECIALIST
CLARiiON Solutions Specialist Exam for Technology Architects (E20-520)					
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	SPECIALIST
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 Security and Basic Management, 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, Unisphere Analyzer, Unisphere Quality of Service Manager, 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 Unisphere and other components of the Unisphere suite • 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)					
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

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

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/Online ILT 2 Days

This expert level class focuses on the design of solutions using CLARiiON Replication Software in a FLARE 30 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/Online 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 30 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 30 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/Online 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.

Solutions Design Concepts ValuePak V5

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 V5
- Data Archiving Solutions Design Concepts V5
- Data Migration Solutions Design Concepts V5
- Information Security Solutions Design Concepts V5
- Exchange and SQL Server Solutions Design Concepts V5
- Oracle Solutions Design Concepts V5
- SAN Solutions Design Concepts V5 - Part 1
- SAN Solutions Design Concepts V5 - Part 2
- Storage Management Solutions Design Concepts V5
- Symmetrix Solutions Design Concepts V5
- Virtualization Solutions Design Concepts V5
- Virtualization Solutions Design Concepts V5 - Part 2
- VNX for Block Solutions Design Concepts V5
- VNX for File Solutions Design Concepts V5

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)					
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	EXPERT
Technology Architect Solutions Design Exam (E20-322)					
Solutions Design Concepts ValuePak V5 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)**			24 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	SPECIALIST
EMC Storage and Information Infrastructure Exam for Technology Architects (E20-500)					
EMC Storage and Information Infrastructure Tiered Storage Products, Backup and Recovery Systems, Virtualized DataCenter, Resource Management and Information Security, Customer Applications and Proven Solutions		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	
Information Storage and 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-ESI2 Enterprise Self-Paced PARTNERS ONLY
CE-VALTASIIE $1,200

Contains associate level, as well as one Video-ILT, thirteen 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

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

Solutions Design Concepts ValuePak V5

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 V5
- Data Archiving Solutions Design Concepts V5
- Data Migration Solutions Design Concepts V5
- Information Security Solutions Design Concepts V5
- Exchange and SQL Server Solutions Design Concepts V5
- Oracle Solutions Design Concepts V5
- SAN Solutions Design Concepts V5 - Part 1
- SAN Solutions Design Concepts V5 - Part 2
- Storage Management Solutions Design Concepts V5
- Symmetrix Solutions Design Concepts V5
- Virtualization Solutions Design Concepts V5
- Virtualization Solutions Design Concepts V5 - Part 2
- VNX for Block Solutions Design Concepts V5
- VNX for File Solutions Design Concepts V5

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 V5 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)**			24 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

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

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 V5

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 V5
- Data Archiving Solutions Design Concepts V5
- Data Migration Solutions Design Concepts V5
- Information Security Solutions Design Concepts V5
- Exchange and SQL Server Solutions Design Concepts V5
- Oracle Solutions Design Concepts V5
- SAN Solutions Design Concepts V5 - Part 1
- SAN Solutions Design Concepts V5 - Part 2
- Storage Management Solutions Design Concepts V5
- Symmetrix Solutions Design Concepts V5
- Virtualization Solutions Design Concepts V5
- Virtualization Solutions Design Concepts V5 - Part 2
- VNX for Block Solutions Design Concepts V5
- VNX for File Solutions Design Concepts V5

Celerra Learning Path
Platform Engineer

EMC² PROVEN PROFESSIONAL

For EMC Velocity 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

Celerra 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 EMC Velocity 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

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 EMC Velocity Partners who maintain and support EMC Symmetrix DMX3/4 and VMAX 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 Symmetrix related issues using SymmWin GUI and Inlines Commands.

Courses	Instructor-Led Training	Online ILT	e-Learning	Course Objectives
Symmetrix Specialist Exam for Platform Engineers (E20-616)				
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 VMax 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 VMax, Storage Bay DMX-3&4 and VMax, System Bay DMX-3&4 and VMax, FRUs DMX-3&4, FRUs VMax, Tools, Inlines, Power, Vault, Symmwin	5 Days			• Identify and locate the main components of the VMax, DMX-3 & 4 • Describe the available drive bay configurations • Cable backend and perform a DMX-3 DMX-4 & VMAX installation •Troubleshoot common installation issues •Download and use Tools required for installation and maintenance •Download and use eLicense required for installation and upgrade •Describe communications functionality • DMX-3 & DMX-4 XCM (combined communications and environmental module) •VMAX MM (Management Module) •Perform non-disruptive replacements for field replaceable units •Use SymmWin features in 5773 5874 & 5875 Enginuity •Describe Vaulting concepts
Symmetrix Hardware Symmetrix DMX, Symmetrix VMax			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 VMax storage bay • Describe the available Symmetrix VMax configurations
SRDF Foundations SRDF connections and configurations, modes of operation and SRDF family options, SRDF management software and basic operations			2 Hours	• Explain SRDF management software offerings and recovery operations • Identify and differentiate the SRDF family of products • Describe management considerations for deployment of SRDF
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 platforms and architecture, Symmetrix I/O operations and volume types, Symmetrix features and management			2 Hours	• Enumerate benefits of Symmetrix arrays • Describe Symmetrix features and management software tos
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

Purchase Options

Partner Subscription
CE-SUBPNR01 $8,500

For details on purchase options see page 74.

VNX
Platform Engineer

For EMC Velocity Partners who install, maintain and support unified storage solutions using the EMC VNX Series storage platform. This certification aligned curriculum offers knowledge, Lab experiences, and formal recognition required for a credible support engineer to install, maintain and troubleshoot EMC VNX Series based storage solutions. This includes rack, stack, cable, power on, VNX Operating Environment microcode upgrades, FRU replacement procedures and basic troubleshooting.

Courses	Video Instructor-Led Learning	Instructor-Led Training	e-Learning	Course Objectives	Levels
VNX Specialist Exam for Platform Engineers (E20-690)					SPECIALIST
VNX Unified Storage Installation and Maintenance This course provides participants with hands-on experience installing EMC VNX Series unified storage systems and performing common maintenance and troubleshooting activities. Lab activities include experience installing, cabling, initializing and performing replacement of Field Replaceable Units (FRUs) and Customer Replaceable Units (CRUs) as well as upgrading the VNX Operating Environment system software. Participants will also learn how to perform service enablement tasks; product registration, system recovery and event monitoring.		5 Days		• Identify and use the initialization and installation tools and procedures • Install and configure a VNX block storage system, a VNX file storage system and a VNX gateway storage system • Perform upgrades to the VNX Operating Environment system software • Troubleshoot common installation and upgrade issues • Perform common FRU and CRU replacements • Use common Linux commands on the VNX control station • Describe the procedures to perform a VNX system recovery • Collect system logs and identify boot faults	
VNX Foundations Overview of VNX Family and Software Suites and Packs, VNX and VNXe Architecture and Theory of Operations, VNX Storage System Features, Storage Object Management with Unisphere, Managing SAN Copy			2.5 Hours	• Describe the architecture, terminology and key features of the VNX and VNXe series platforms and VNX VG2 and VG8 gateways • Identify VNX Family Data Integrity and availability features, as well as VNX family management options and storage objects	
VNX Local Protection Suite Local Protection Suite Components, VNX SnapView, VNX SnapSure, RecoverPoint/SE CDP, VNX Local Protection Suite Use Cases			2.5 Hours	• Identify VNX SnapView and SnapSure architecture • Identify RecoverPoint/SE CDP architecture	
VNX Remote Protection Suite VNX Remote Protection Suite, VNX MirrorView, VNX Replicator & RecoverPoint/SE CRR			2.5 Hours	• Describe VNX MirrorView/S and MirrorView/A architecture, theory of operation, and features • Describe VNX Replicator & RecoverPoint/SE CRR architecture	
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	
VNX Hardware Foundations VNX Series Architecture and Features, VNX Series Specifications, VNX Series Cabling, Introduction to SAS Drives			1 Hour	• Describe VNX Series architecture, features and cabling • Describe VNX Series Specifications – 5100, 5300, 5500, 5700 • Discuss SAS Drives	
VNX Installation and Configuration Overview Cabling and configuring a VNX storage system, upgrading VNX software, installation tools and resources			1 Hour	• Configure and cable a VNX Series storage system using the Unisphere Suite of tools and the IIG (Interactive Installation Guide) • Upgrade the software running on a VNX Series storage system	
VNX Block Storage Provisioning Using Unisphere Wizard Creating and allocating block-level storage			1 Hour	• Use Unisphere wizards to create LUNs and assign them to an open systems host through a block-level SAN interface	
VNX File Provisioning using Installation Wizard Creating and exporting/sharing file systems			1 Hour	• Use Unisphere wizards to create file systems and assign them to an open systems host through a file-level network interface	
VNX Basic Maintenance Downloading and using the procedure generator, downloading and using Unisphere Service Manager, adding DAEs, adding and replacing disk drives			2 Hours	• Use correct procedures to replace failed VNX FRUs • Interpret system log messages • Interpret Unisphere alerts • Verify correct hardware configuration of a VNX system	
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

EMCPE VNX Sol. Inst-Led PARTNERS ONLY
CE-VALPE-VNX $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.

CLARiiON Learning Path
Platform Engineer

For EMC Velocity 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.

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 Recovery - Avamar Implementation Engineer

EMC² PROVEN PROFESSIONAL

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.

Courses	Instructor-Led Training	Video ILT	e-Learning	Course Objectives
Backup 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	• 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 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			• 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 • Install Avamar Administrator and Client software • Run on-demand snapups from the Avamar Administrator and the Avamar Client 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 the Avamar backup and restore process • Explain how to perform snapups and restores • Describe Avamar maintenance activities • Describe Avamar monitoring and reporting capabilities
AND **Backup Recovery Systems and Architecture Exam (E20-005)**				
Backup Recovery Systems and Architecture Backup Theory, Information Storage Concepts, Backup Client, Backup Storage Node, Backup and Recovery Planning			8 Hours	• Describe backup and recovery terminology and operations • Describe various types of storage systems, concepts and components • Identify major sources of backup data • Describe the different types of backup storage media, their advantages and disadvantages
OR* **Information Storage and Management Exam (E20-001)**				

SPECIALIST

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 Avamar Instructor-Led PARTNERS ONLY
CE-AVAXIADV $2,500
Contains associate level*, one Instructor-Led, three self-paced e-Learning courses and one Proven Professional Exam voucher. * Choose between Information Storage and Management course, or Backup Recovery Systems and Architecture course.

EMCIE-BR Avamar Self-Paced PARTNERS ONLY
CE-SPIE-AVA $1,200
Contains associate level*, one Video-ILT, three self-paced e-Learning courses and one Proven Professional Exam voucher. * Choose between Information Storage and Management course, or Backup Recovery Systems and Architecture course.

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 Recovery-NetWorker Implementation Engineer

EMC² PROVEN PROFESSIONAL

For any EMC Velocity 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.

Courses	Video Instructor-Led Learning	Instructor-Led Training	e-Learning	Course Objectives	Levels
Backup Recovery - NetWorker Specialist Exam for Implementation Engineers (E20-593)					SPECIALIST
EMC NetWorker Installation, Configuration and Administration EMC NetWorker overview, installing NetWorker and NetWorker management console, NetWorker resources and administrative interfaces, performing backups, NetWorker media management, configuring and managing libraries, configuring and managing standalone devices, NetWorker database management, performing cloning and staging, administering the NetWorker server, administering the NetWorker management console server, performing recoveries, recovering a NetWorker server, backing up VSS and cluster environments		5 Days		• Install NetWorker and NetWorker Management Console • Use NetWorker resources and administrative interfaces • Perform and Customize backups • Manage NetWorker media • Configure and manage libraries and standalone devices • Manage NetWorker databases • Perform cloning and staging of save sets • Administer the NetWorker and Management Console server and generate reports • Perform recoveries of client data • Describe how to back up and recover in VSS and cluster environments	
EMC NetWorker Overview EMC NetWorker Foundations, Architecture, Backups, Recoveries			1 Hour	• Describe the EMC NetWorker solution and advantages • Describe NetWorker hosts and their roles • Describe the use of NetWorker control data and administrative interfaces • Describe NetWorker device types and devices, backup process, types, and levels,recovery process and recovery types	
EMC NetWorker Modules Overview Introduction to NetWorker Modules, NetWorker Module Architecture, Database Application Modules, NetWorker Modules for Microsoft Applications, Other NetWorker Application Modules, NetWorker Snapshot Modules			1 Hour	• Describe the EMC NetWorker Module solution • List the advantages of employing EMC NetWorker modules • Explain the NetWorker module architecture • Describe the functionality of each of the NetWorker modules	
AND **Backup Recovery Systems and Architecture Exam (E20-005)**					ASSOCIATE
Backup Recovery Systems and Architecture Backup Theory, Information Storage Concepts, Backup Client, Backup Storage Node, Backup and Recovery Planning			8 Hours	• Describe backup and recovery terminology and operations • Describe various types of storage systems, concepts and components • Identify major sources of backup data • Describe the different types of backup storage media, their advantages and disadvantages	
OR* **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 (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, two self-paced e-Learning courses and three Proven Professional Exam vouchers. Pricing shown reflects partner discount.
* Choose between Information Storage and Management course, or Backup Recovery Systems and Architecture course.

EMCIE-BR NetWorker Self-Paced PARTNERS ONLY
CE-SPIE-BR $1,200
Contains associate level*, as well as one Video-ILT, two self-paced e-Learning courses and three Proven Professional Exam voucher. Pricing shown reflects partner discount.
* Choose between Information Storage and Management course, or Backup Recovery Systems and Architecture course

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 Database 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.

Data Protection Advisor Custom Reporting
20 TU Online ILT 2 Days

This course teaches participants how to build custom reports with Data Protection Advisor, using DPA data sources and external data sources, operators, query nodes and external alerts. Pre-requisite DPA implementation and management exposure is mandatory as this course takes a deeper dive into the custom reporting subject.

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

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

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.

Courses	Video Instructor-Led Learning	Instructor-Led Training	e-Learning	Course Objectives	Levels
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.					

SPECIALIST

ASSOCIATE

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
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
30 TU ILT 3 Days

This course covers the implementation of a Disaster Recovery (DR) solution using Celerra Replicator V2 in a Microsoft Windows CIFS environment. The workshop provides hands-on experience configuring and managing the Celerra though its Unisphere GUI and command line interfaces.

NAS Performance Workshop
50 TU ILT/Online-ILT 5 Days

The NAS Performance Workshop is an advanced level NAS course designed to provide NAS participants with the ability to design and implement EMC NAS solutions with performance in mind. The student will learn to diagnose and troubleshoot NAS performance issues related to EMC Celerra, network, CLARiiON storage array, workload characteristics, and EMC Celerra features. This course currently supports Celerra version 6.0.

Network Attached Storage (NAS) Expert Exam for Implementation Engineers

EXAM E20-860

Additional Training

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.

Symmetrix Solutions Implementation Engineer

For any 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.

Courses	Instructor-Led Training	Online ILT	Video Instructor-Led Learning	e-Learning	Course Objectives	Levels
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	SPECIALIST
Symmetrix Business Continuity Management TimeFinder/Clone and TimeFinder/Snap operations, SRDF/Synchronous and SRDF/Asynchronous operations, SRDF/AR – automated replication, Open Replicator for Symmetrix operational details	5 Days	5 Days			• Describe and perform SRDF operations in Synchronous (SRDF/S) and Asynchronous (SRDF/A) modes using SYMCLI and SMC • Describe and perform SRDF/Automated Replication (SRDF/AR) operations • Describe and perform Open Replicator for Symmetrix (ORS) data replication	
Symmetrix Performance Analyzer (SPA) Fundamentals Installation, options and environment variables, gatekeeper management, Solutions Enabler Daemons				1.5 Hours	• Perform Symmetrix configuration and replication tasks with SMC • Articulate the differences between SMC and the Solutions Enabler command line interface (SYMCLI)	
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 and Federated Live Migration Fundamentals Open Replicator fundamentals, overview of Federated Live Migration				2 Hours	• List Open Replicator actions and the commonly used options • Provide an overview of Federated Live Migration (FLM)	
SRDF Foundations SRDF connections and configurations, modes of operation and SRDF family options, SRDF management software and basic operations				2 Hours	• Explain SRDF management software offerings and recovery operations • Identify and differentiate the SRDF family of products • Describe management considerations for deployment of SRDF	
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 Configuration and device masking overview, device creation and mapping, auto-provisioning, virtual LUN technology, virtual provisioning with Solutions Enabler, monitoring thin pools and using symaudit, configuring with Symmetrix Management Console, FAST theory and practice, FAST implementation using SYMCLI, implementing and managing FAST using SMC	5 Days	5 Days			• Describe how to set Symmetrix Metrics and Device Attributes, manage Dynamic RDF and Device Poolss • Map and Mask Devices using Autoprovisioning • Manage Virtual Provisioning with Solutions Enabler • Use the Symmetrix Management Console to perform Configuration Management • Configure and Manage FAST using SYMCLI and SMC	
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	
Connectrix Foundations SAN Architecture and Components, SAN Fabric Topologies, Securing a SAN, 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	
Symmetrix Foundations Symmetrix platforms and architecture, Symmetrix I/O operations and volume types, Symmetrix features and management				2 Hours	• Enumerate benefits of Symmetrix arrays • Describe Symmetrix features and management software tos	
Information Storage and Management Exam (E20-001)						
Information Storage and Management (5 days) OR (20 hours) (4 e-Learning modules) The only course of its kind to fill the knowledge gap in understanding varied components of modern information storage infrastructure. Learn advanced concepts, technologies and also 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 (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
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/Online ILT 4 Days

This course analyzes the performance of Symmetrix DMX and VMax-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/Online ILT 4 Days

Learn how to identify and create an optimal performance layout for an Oracle database application within a Symmetrix VMax / 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/Online ILT 3 Days

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

OR

Symmetrix Integration with SQL Server
30 TU ILT/Online ILT 4 Days

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

Symmetrix Solutions Expert Exam for Implementation Engineers

EXAM E20-818

Additional Training

VMware vSphere Integration with Symmetrix
50 TU ILT/Online ILT 5 Days

This instructor led, course provides students with opportunity to acquire hands-on experience integrating EMC Symmetrix VMax 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 VMax 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.

VNX Solutions Implementation Engineer

For EMC Velocity Partners who implement unified storage solutions using the EMC VNX Series storage platform. This certification aligned curriculum offers knowledge, Lab experiences and formal recognition required for a credible implementation engineer to install, configure and deploy EMC VNX Series Block (FC, iSCSI and FCOE) and File (NFS, pNFS and CIFS) based storage solutions in heterogeneous virtualized open systems environments. This includes implementing and configuring the array, host access, local replicas and using the Unisphere application suite to test, validate and demonstrate implemented solutions for customers.

Courses	Video Instructor-Led Learning	Instructor-Led Training	e-Learning	Course Objectives
VNX Solutions Specialist Exam for Implementation Engineers (E20-390)				
VNX Unified Storage Implementation This course provides participants with hands on experience implementing EMC VNX Series unified storage systems in a Block (FC, iSCSI, FCoE) and File (NFS, pNFS, CIFS) environment. Initial array configuration, domain management, security and availability using Unisphere are covered in detail. SAN host attach and SAN configurations with Linux, Windows and VMware ESXi are covered in practical lab exercises. NAS configuration, file system creation, export, permissions, quotas, in Linux, VMware ESXi, and Windows environments using NFS, pNFS and CIFS protocols are explored in detailed hands on lab exercises		5 Days		• Implementing Unisphere Security • Configure RAID groups, LUNs and Pools for Block storage access • Configure a Windows, Linux and VMware ESXi servers for FC, iSCSI or FCOE block storage access using AccessLogix, PowerPath and Unisphere • Configure metaLUNs, FAST pools, data compression and FAST Cache • Perform basic network configuration for NFS and CIFS access • Configure , manage and export file systems for NFS or CIFS access • Implement DataMovers and Virtual DataMovers • Implement CIFS features • Configure VNX networking features • Managing SnapView and Snapsure local replicas
VNX Foundations Overview of VNX Family and Software Suites and Packs, VNX and VNXe Architecture and Theory of Operations, VNX Storage System Features, Storage Object Management with Unisphere, Managing SAN Copy			2.5 Hours	• Describe the architecture, terminology and key features of the VNX and VNXe series platforms and VNX VG2 and VG8 gateways • Identify VNX Family Data Integrity and availability features, as well as VNX family management options and storage objects
VNX Local Protection Suite Local Protection Suite Components, VNX SnapView, VNX SnapSure, RecoverPoint/SE CDP, VNX Local Protection Suite Use Cases			2.5 Hours	• Identify VNX SnapView and SnapSure architecture, functions and theory of operation • Identify RecoverPoint/SE CDP architecture and functions
VNX Remote Protection Suite VNX Remote Protection Suite, VNX MirrorView, VNX Replicator & RecoverPoint/SE CRR			2.5 Hours	• Describe VNX MirrorView/S and MirrorView/A architecture, theory of operation, and features • Describe VNX Replicator & RecoverPoint/SE CRR architecture & functions
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
VNX Application Protection Suite Replication Manager – overview and features & functionality, Data Protection Advisor – overview and features & functionality			1 Hour	• Identify Replication Manager architecture, and functions • Identify Data Protection Advisor – Replication Analysis architecture, functions and theory of operations
VNX Hardware Foundations VNX Series Architecture and Features, VNX Series Specifications, VNX Series Cabling, Introduction to SAS Drives			1 Hour	• Describe VNX Series architecture, features and cabling • Describe VNX Series Specifications – 5100, 5300, 5500, 5700 • Discuss SAS Drives
VNX Installation and Configuration Overview Cabling and configuring a VNX storage system, upgrading VNX software, installation tools and resources			1 Hour	• Configure and cable a VNX Series storage system using the Unisphere Suite of tools and the IIG (Interactive Installation Guide) • Upgrade the software running on a VNX Series storage system
VNX Block Storage Provisioning Using Unisphere Wizard Creating and allocating block-level storage			1 Hour	• Use Unisphere wizards to create LUNs and assign them to an open systems host through a block-level SAN interface
VNX File Provisioning using Installation Wizard Creating and exporting/sharing file systems			1 Hour	• Use Unisphere wizards to create file systems and assign them to an open systems host through a file-level network interface
VNX Basic Maintenance Downloading and using the procedure generator, downloading and using Unisphere Service Manager, adding DAEs, adding and replacing disk drives			2 Hours	• Use correct procedures to replace failed VNX FRUs • Interpret system log messages and Unisphere alerts • Verify correct hardware configuration of a VNX system
Information Storage and Management Exam (E20-001)				
Information Storage and Management (5 days) OR (20 hours) (4 e-Learning modules) This course 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.				

Levels: SPECIALIST, ASSOCIATE

Purchase Options (Velocity Service Partners Only)

EMCIE-VNX Sol. Inst-Led PARTNERS ONLY
CE-VALIE-VNX $2,500
Contains associate level, one Instructor-Led course, eleven self-paced e-Learning courses and three Proven Professional Exam vouchers. Pricing shown reflects partner discount.

EMCIE VNX Imp. Self-Paced PARTNERS ONLY
CE-SPIE-VNX $1,200
Contains associate level, one Video-ILT , eleven self-paced e-Learning courses and three Proven Professional Exam vouchers. Pricing shown reflects partner discount. *This package can be purchased using Subscription, Training Units, Credit Card or Purchase Order

Content-Addressed Storage Learning Path
Implementation Engineer

For EMC Velocity 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.

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.						

Purchase Options (Velocity Service Partners Only)

EMCIE-CAS Instructor-Led PARTNERS ONLY
CE-VALIE-CAS $2,500
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
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 EMC Velocity 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.

Courses	Video Instructor-Led Learning	Instructor-Led Training	e-Learning	Course Objectives	Levels
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	SPECIALIST
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 Switch Architecture & 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.					ASSOCIATE

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.

EMCIE-CLN Sol. Self Paced Partner Only (Training available for purchase now (available through CXP in Feburary 2012))
CE-SPIE-CLN $1,200
Contains associate level, as well as one Video-ILT, 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/Online ILT 3 Days

This workshop focuses on the deployment of CLARiiON Replication Software in a FLARE 30 CLARiiON environment.

CLARiiON Performance Workshop
30 TU ILT/Online 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.

CLARiiON Integration with Microsoft Exchange Server Workshop
30 TU ILT/Online ILT 3 Days

This course focuses on the deployment of Exchange 2010 in a FLARE 30 CLARiiON environment. Learn how to design and implement CLARiiON storage arrays to support a VMware vSphere virtualized infrastructure hosting an enterprise-level Exchange Server 2010 environment. Use-case scenarios and best practices centered on choosing RAID types, CLARiiON Thin Provisioning, VMware VMFS, VMware iSCSI, and RDM disk layouts will be considered.

OR

CLARiiON Integration with SQL Server Workshop
30 TU ILT/Online ILT 3 Days

This expert level workshop focuses on the deployment of SQL Server in a FLARE 30 CLARiiON environment. Learn the best practices to implementing SQL Server on an CLARiiON storage array, such as spindle count, RAID configuration, and database layout. Also considered is local replication and recovery using EMC Replication Manager 5.x, including database DR. Finally, remote replication solutions – both synchronous as well as point in time – will be covered using such EMC technologies as MirrorView, SanCopy, and RecoverPoint.

CLARiiON Solutions Expert Exam for Implementation Engineers

EXAM E20-850

Additional Training

VMware vSphere Integration with CLARiiON
50 TU ILT/Online 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 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.

DataDomain
Product/Technology-Specific

This curriculum is for Velocity Partners Specializing in Data Domain. It will prepare candidates to install, implement and administer Data Domain Systems concurrent with the 5.0 software release

Courses	Instructor-Led Training	Online ILT	Video-ILT	e-Learning	Course Objectives
					EMC Data Domain Deduplication, Backup Recovery Exam (E22-290)
Data Domain System Administration Data Domain system concepts, Verifying system configuration, Performing data backups, Managing network interfaces, Configuring and managing a VTL, Managing data, Managing replication and recovery, Managing DD Boost, Planning for capacity and throughput, Monitoring a Data Domain system, Upgrading a Data Domain system, Software licenses	3 Days	3 Days			• Describe deduplication • Describe the Data Domain operating environment, including Data Domain deduplication • Identify and configure Data Domain data paths • Perform a Data Domain system initial setup • Access and copy data to a Data Domain system • Configure and manage Data Domain network interfaces • Describe and configure a VTL • Customize and manage a Data Domain deduplication file system • Describe and perform data replication and recovery • Describe DD Boost • Perform a DD Boost backup • Describe capacity and throughput planning • Monitor a Data Domain system
Data Domain System Installation Installation preparation and safety precautions, Rack mounting of controllers and expansion shelves, Cabling of controllers and expansion shelves, Powering up and performing initial software configuration, Verifying connectivity, Performing several follow-up configuration tasks				3 Hours	• Prepare for installation, with required tools and safety precautions • Install rails, and rack system hardware • Connect and cable expansion shelves • Perform initial configuration of Data Domain systems • Configure network connectivity for administrative access • Verify interoperability with connected devices • Perform additional configuration tasks in the Enterprise Manager •Get started with DD Archiver and GDA configurations
Data Domain Implementation with Application Software Data Domain system as a file system and VTL to common Application Software; EMC Networker, Symantec's NetBackup, Symantec's Backup Exec and IBM Tivoli Storage Manager. Data Domain BOOST integration with EMC NetWorker, Symantec's NetBackup and Symantec's Backup Exec.				2 Hours	• Identify the key application software components and terminology • Recognize the packet flow in a typical backup environment with the Data Domain system. • Implement Data Domain system as a file system and VTL to application software. • Validate application software backup and recovery functionalities • Implement best practices and tuning • Implement DD BOOST with application software
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				1.5 Hours	• List the challenges behind conventional backup technology and describe how inline deduplication addresses them • Describe the product family of EMC Data Domain systems • Describe basic hardware features of EMC Data Domain systems • Describe basic features of the Data Domain Operating System and file systems • Describe the optional licenses available • Describe system data protection measures • Show common networking layouts employed for EMC Data Domain systems • List the common protocols supported

Purchase Options

DataDomain Inst-Led PARTNERS ONLY
CE-VALPTDD $2,000

Data Domain Deduplication Video ValuePak
CE-VIDPKDDD $1,800

For details on purchase options see page 74.

EMC Technology Foundations

Product/Technology Specific

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 SRDF connections and configurations, modes of operation and SRDF family options, SRDF management software and basic operations			2 Hours	• Explain SRDF management software offerings and recovery operations • Identify and differentiate the SRDF family of products • Describe management considerations for deployment of SRDF
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 platforms and architecture, Symmetrix I/O operations and volume types, Symmetrix features and management			2 Hours	• Enumerate benefits of Symmetrix arrays • Describe Symmetrix features and management software tos
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
OR				
EMC Technology Foundations 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 74.

Ionix for IT Operations Intelligence

Product/Technology-Specific

EMC² PROVEN PROFESSIONAL

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.

ValuePaks

Courses	Video Instructor-Led Learning	Instructor-Led Training	Online ILT	e-Learning	Course Objectives	Levels
Ionix for IT Operations Intelligence (E22-250)						
Ionix Service Assurance Manager Administrator Introduction to Ionix Service Assurance Manager, user environment configuration, Service Assurance Manager configuration, notification adapters, groups, Business Impact Manager overview and setup, Business Impact Manager configuration, escalation policies		3 Days	3 Days		• Define the flow of information between Ionix components • View and explore the results of the Ionix diagnostic analysis • Analyze the network and service impacts caused by failures • Maintain user logins and their associated user profiles • Automate actions to respond to failure notifications • Incorporate customer and service information into Service Assurance Manager to manage infrastructure in the context of business • Provide end-to-end insight into how IT health relates to key business services	
Ionix IP Management Administrator Installation, Ionix IP Manager fundamentals, the discovery process, the auto-discovery process, polling groups, threshold groups, IP tagging, working with the managed topology		2 Days	3 Days		• Describe the value proposition of Ionix IP Manager • Classify the types of entities managed by Ionix IP Manager • Recognize the fundamental capabilities of Ionix IP Manager, including the entities managed, relationships modeled and problems diagnosed • Express how Ionix IP Manager fits within the Ionix suite of products • Install and configure the IP Management Suite • Configure Ionix IP Manager to discover and manage IP network systems	
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	

Purchase Options

Ionix for IT Ops Intel. ValuePak
CE-VALPAKSMT $5,000

Ionix for IT ops Intel Video ValuePak
CE-VIDVPKSMT $3,000
Contains Video-ILTs

RecoverPoint Data Replication and Recovery

Product/Technology-Specific

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.

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 74.

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.

Celerra Unified Storage QuickStart (NX4 and NS120)

This curriculum provides education and an assessment test required for partners who wish to achieve a QuickStart Services designation in order to implement Celerra Unified systems models NX4 and NS120. 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 6.0.

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 partners free of charge through the Affiliate Enablement Center.

Powerlink ›› Training ›› Velocity Affiliate Enablement Center

CLARiiON AX4-5 and CX4-120,240 QuickStart

This curriculum provides education and an assessment test required for partners who wish to achieve a QuickStart Services designation in order to 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.

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 partners free of charge through the Affiliate Enablement Center.

Powerlink ›› Training ›› Velocity Affiliate Enablement Center

Data Domain Installation, Implementation and Administration QuickStart

This curriculum provides education and an assessment tests required for partners who wish to achieve a QuickStart Services designation in order to implement Data Domain products models 140 and 610.

Courses	Video Instructor-Led Learning	Instructor-Led Training	e-Learning	Course Objectives
				End of course assessment
EMC Data Domain QuickStart Installation Installation preparation and safety precautions, rack mounting and cabling of controllers, powering up and performing initial software configuration, verifying connectivity, performing several follow-up configuration tasks			2 Hours	• Prepare for installation, with required tools and safety precautions • Install rails, and rack system hardware • Perform initial configuration of Data Domain systems • Configure network connectivity for administrative access • Verify interoperability with connected devices • Perform additional configuration tasks in the Enterprise Manager
				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 four 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

This training is available to Velocity partners free of charge through the Affiliate Enablement Center.

Powerlink ›› Training ›› Velocity Affiliate Enablement Center

VNX Series Implementation QuickStart

For new EMC Velocity Partners who will perform basic unified VNX storage platform installation using the VNX installation Assistant and Unisphere. Additional training beyond the foundation modules will be required to deploy Local / Remote / Application Protection software suites. This learning path provides eLearning based education and online assessment required for partners who setup VNX Series systems. This includes basic knowledge of the VNX Series architecture, theory of operations, features and functions, Local/Remote/ Application Protection software suites; detailed knowledge on the rack stack, cable, power on, VNX Operating Environment microcode upgrades, FRU replacement and procedures; and basic Block and File based storage provisioning using the VNX Installation Assistant and Unisphere wizards.

Courses	Video Instructor-Led Learning	Instructor-Led Training	e-Learning	Course Objectives
				Assessment
VNX Foundations Overview of VNX Family and Software Suites and Packs, VNX and VNXe Architecture and Theory of Operations, VNX Storage System Features, Storage Object Management with Unisphere, Managing SAN Copy			2.5 Hours	• Describe the architecture, terminology and key features of the VNX and VNXe series platforms and VNX VG2 and VG8 gateways • Identify VNX Family Data Integrity and availability features, as well as VNX family management options and storage objects
VNX Local Protection Suite Local Protection Suite Components, VNX SnapView, VNX SnapSure, Recover-Point/SE CDP, VNX Local Protection Suite Use Cases			2.5 Hours	• Identify VNX SnapView and SnapSure architecture, functions and theory of operation • Identify RecoverPoint/SE CDP architecture, functions and theory of operation
VNX Remote Protection Suite VNX Remote Protection Suite, VNX MirrorView, VNX Replicator & RecoverPoint/ SE CRR			2.5 Hours	• Describe VNX MirrorView/S and MirrorView/A architecture, theory of operation, and features • Describe VNX Replicator & RecoverPoint/SE CRR architecture, theory of operation, and features
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
VNX Application Protection Suite Replication Manager – overviewand features & functionality, Data Protection Advisor – overview and features & functionality			1 Hour	• Identify Replication Manager architecture, functions and theory of operations • Identify Data Protection Advisor – Replication Analysis architecture, functions and theory of operations
VNX Hardware Foundations VNX Series Architecture and Features, VNX Series Specifications, VNX Series Cabling, Introduction to SAS Drives			1 Hour	• Describe VNX Series architecture, features and cabling • Describe VNX Series Specifications – 5100, 5300, 5500, 5700 • Discuss SAS Drives
VNX Installation and Configuration Overview Cabling and configuring a VNX storage system, upgrading VNX software, installation tools and resources			1 Hour	• Configure and cable a VNX Series storage system using the Unisphere Suite of tools and the IIG (Interactive Installation Guide) • Upgrade the software running on a VNX Series storage system
VNX Block Storage Provisioning Using Unisphere Wizard Creating and allocating block-level storage			1 Hour	• Use Unisphere wizards to create LUNs and assign them to an open systems host through a block-level SAN interface
VNX File Provisioning using Installation Wizard Creating and exporting/sharing file systems			1 Hour	• Use Unisphere wizards to create file systems and assign them to an open systems host through a file-level network interface
VNX Basic Maintenance Downloading and using the procedure generator, downloading and using Unisphere Service Manager, adding DAEs, adding and replacing disk drives			2 Hours	• Use correct procedures to replace failed VNX FRUs • Interpret system log messages • Interpret Unisphere alerts • Verify correct hardware configuration of a VNX system

This training is available to Velocity partners free of charge through the Affiliate Enablement Center.

Powerlink ›› Training ›› Velocity Affiliate Enablement Center

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 $3,300

Additional Training

Data Protection Advisor Custom Reporting
20 TU Online ILT 2 Days

This course teaches participants how to build custom reports with Data Protection Advisor, using DPA data sources and external data sources, operators, query nodes and external alerts. Pre-requisite DPA implementation and management exposure is mandatory as this course takes a deeper dive into the custom reporting subject.

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

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

For details on purchase options see page 74.

Ionix for Network Configuration Manager

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

ValuePaks

Courses	Online ILT	Instructor-Led Training	e-Learning	Course Objectives
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				
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 74.

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 74.

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 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: What's New [5.0] Introduction to VMware vSphere 5.0, virtual machine management, network management, storage management, scalability, high availability, new VMware vSphere deployment alternatives		2 Days		• List and describe key enhancements in vSphere 5.0 • Upgrade a deployment from vSphere 4.x to vSphere 5.0 • Manage a version 8 virtual machine with the next-generation Web-based VMware vSphere Client • Configure a VMware high availability cluster based on the new • Fault Domain Manager agents	
VMware vSphere: Install, Configure, Manage Virtual machines, VMware vCenter Server, configure and manage virtual networks and manage vSphere storage, virtual machine management, access and authentication control, resource management and monitoring, data protection, high availability and fault tolerance, scalability, patch management, installing VMware vSphere 5 components		5 Days		• Install and configure ESXi and vCenter Server components • Deploy, manage, and migrate virtual machines • Manage user access to the VMware infrastructure • Monitor resource usage using vCenter Server • Increase scalability using vCenter Server • Apply ESXi 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 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

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

Purchase Options and Delivery Modes

Purchase Options:

Training Units—Training Units are prepaid EMC education currency, which is added into your company's training account and shared by your organization's employees. Training Units are the most flexible purchase option available and are valid for one year from the date of purchase. EMC Partners receive a standard 15 percent discount.

CE-TU0001	1 Training Unit	$ 100
CE-TU0050	50 Training Units	$5,000
CE-TU0100	100 Training Units	$10,000
CE-TU0250	250 Training Units	$25,000

Individual Subscriptions—Individual subscriptions provide access to the entire EMC training library for one full year. Subscriptions are the ideal way to purchase training for those striving to accelerate readiness in one or more specializations, as well as those pursuing EMC Proven Professional certification. Individual Subscriptions are valid for one (1) year from date of activation with activation not to exceed 60 days from the invoice date. All pricing is pre-discounted, negotiate additional discounts by purchasing corporate training subscriptions for ten or more students.

CE-SUBPNR01	Partner Subscription—1 person, 1 year	$8,500 USD
CE-SUBPNR02	Partner Subscription—1 person, 2 years	$15,000 USD

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

Onsite—If you have eight or more employees taking the same course, consider a custom onsite offering. We deliver our instructor-led training experience to your site or at a nearby EMC facility. Contact EMC Education Services or ask for Technical Training Consultants through your account representatives for more information. EMC Partners receive a standard 15 percent discount.

One year subscriptions hold a maximum attainable value of $25,000 USD, based on the list price represented in the EMC Education Services on-line catalog. Subscription options do not apply to Content Management, or RSA.

Delivery Modes

The key advantage of blended learning is *flexibility*. Choose the learning mode that best fits your learning style, time constraints, and budget.

e-Learning—Self-paced training, generally 1 to 3 hours in length which can be accessed directly over the Internet or downloaded to your PC for use at your convenience. Also includes downloadable and printable student guides that can be taken anywhere, anytime.

Instructor-Led Training (ILT)—Traditional classroom training, with hands-on labs or case-studies, delivered at one of our many training centers worldwide, by a highly qualified EMC instructor.

Video Instructor-Led Training (VILT)—Top-instructor-delivered, Instructor-Led Training (ILT), packaged in a convenient CD-ROM/DVD-ROM format, with an intuitive navigation menu. Lecture content, lab exercises, and student materials are identical to the ILT.

Online Instructor-Led Training (Online ILT)—A real time interactive training experience where students participate online to access the instructor-led virtual classroom. Lecture, discussion, questions and answers, and lab exercises make this a rich and flexible training experience.

EMC Proven Professional Certifications for Content Management

Becoming an EMC Proven Professional validates your expertise in the latest EMC technology and solutions. Tracks supporting content management solutions are now part of the industry recognized storage and information management EMC Proven Professional program. EMC Proven Professional certification brings powerful benefits to individuals and the companies for which they work.

As part of the EMC Proven Professional Program, the Information Intelligence Group offers certifications for technical Roles as well as specific Products and Technologies.

Role specific certifications are available in four tracks:

Associate EMCPA— Ideally suited for IT professionals who are familiar with the basic requirements of an enterprise content management system. This certification acknowledges knowledge and comprehension in the basic operations of the Documentum Content erver platform.

Application Developer EMCApD — Ideally suited for application developers with responsibility for customizing or developing applications using various EMC software API and integrating EMC software applications and toolsets with other applications.

System Administrator EMCSyA — Ideally suited for system administrators with responsibility for installing, configuring, maintaining, troubleshooting, and optimizing the performance of various EMC software systems.

Technology Architect EMCTA — Ideally suited for systems or application architects with responsibility for preparing the architecture of an enterprise content management solution based on business requirements.

Product/Technology specific certifications are available for our Captiva, Document Sciences, and SourceOne Families

For up-to-date information on Content Management Certifications, please visit http://mylearn.EMC.com.

Education Services Virtual Labs (ESVL)

The Education Services Virtual Labs are actual lab configurations that are accessed via our Virtual Data Center (VDC) technology for the purpose of lesson review, skills enhancement and self-directed product knowledge refresh. The ESVL is for EMC partners that have attended Education Services training and would like to enhance or refresh their product knowledge.

Schedule a session today! http://education.EMC.com (Partner login required)

Visit us Online!

Make sure to visit us online to take advantage of our featured courses. They often include:

- Free promotional e-Learning titles
- Courses on new technology concepts and best practices
- Based on new updated EMC technology

Check them out today at http://education.EMC.com

Industry Awards for EMC Training

EMC has ranked in Training magazine's Top 125 for the past five consecutive years—a ranking of organizations that excel at employee training and development.

The STAR Awards recognize technology companies that display exceptional leadership, innovation, and commitment in developing and implementing best practices.

EMC was #8 on the list of industry-leading organizations out of more than 200 applicants. Other companies in the LearningElite "Top 10" include AT&T, General Mills, and McDonald's Corp.

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