MICROSTRATEGY 2020
EDUCATION
COURSE CATALOG

EMPOWER YOUR ORGANIZATION TO
BUILD AND MANAGE WORLD-CLASS
INTELLIGENCE APPLICATIONS
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<td>11.148</td>
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### CATALOG SUMMARY
MICROSTRATEGY EDUCATION—TRAIN AND CERTIFY EVERY USER

MicroStrategy Education is committed to the success of every MicroStrategy practitioner, from novice analysts to the most experienced Intelligence Center architects. To that end, we’ve designed a program of continuous training and certification for the essential roles in your Intelligent Enterprise.

And our subscription-based Education Passes make it easy, giving you convenient and economical access to all the training you need to build your MicroStrategy skills and advance your career. Our key educational offerings include:

MICROSTRATEGY EDUCATION PASS – ANALYST

For Analysts, Data Scientists, and Developers

This catalog introduces certifications and recommended learning paths for Analysts, Data Scientists, and Developers. The Analyst Pass is a 12-month subscription that gives you cost-effective access to all the courseware related to these three certifications (11 courses).

Education Pass – Analyst is $350 per user, discounted to $200 when purchased in a bundle of 100 or more.*

MICROSTRATEGY EDUCATION PASS – ARCHITECT

For Architects and Administrators

We’ve developed new, advanced certifications for nine critical Intelligence Center roles. The Architect Pass is a 12-month subscription that gives you unlimited access to our entire catalog of live and on-demand courseware.

Education Pass – Architect is $3,500 per user, discounted to $2,000 when purchased in a bundle of 10 or more.*

MICROSTRATEGY EDUCATION SERVICES

For Private and Custom Course Delivery

We also offer a range of options to have one of our experts deliver private training which can be further tailored to the specific needs of your organization. We use Education Services to cover the costs of preparing and customizing the content and delivering it at your location.

A detailed summary of our MicroStrategy Education Services options can be found on Page 5 of this document.*

*Local non-USD pricing available upon request.
CERTIFICATION PATHS FOR EVERY ROLE

MicroStrategy’s certifications are recognized throughout the industry for their rigorous learning paths and hands-on final projects. A MicroStrategy certification will validate and promote your expertise inside and outside your company.

After completing your certification, you’ll receive a digital badge to post on social media to highlight your accomplishment, and you can be included in MicroStrategy’s Registry of Certified Professionals.

The Analyst Pass supports three foundational certifications. Every MicroStrategy practitioner should earn their Analyst Certification (ANL) as a baseline, and then explore the Data Scientist (SCI) and Developer (DVL) paths to deepen their knowledge.

With the Architect Pass, you can pursue more advanced certifications for specialized Intelligence Center roles. Every architect level user should earn their MicroStrategy Certified Architect (MCA) to validate their expertise across all aspects of the MicroStrategy platform. From there, architects and administrators can earn more specialized certifications to master specific Intelligence Center roles.

CONVENIENT LEARNING OPTIONS – TRAIN ON YOUR TERMS

The MicroStrategy Course Catalog features over 50 multi-level courses and certifications covering a full spectrum of topics related to analytics and mobility. Our courseware is available in multiple languages and in a variety of formats. You can select the training method that works best with your schedule and preferences:

**Instructor-led Classroom:** MicroStrategy-certified instructors deliver our courses live in cities around the world. You’ll benefit from hands-on experiences, exceptional materials, and interactions with up to 20 peers.

**Instructor-led Online:** MicroStrategy-certified instructors deliver our courses live and online in various time zones around the world. You’ll work in our high-performance cloud environment while avoiding the hassle of traveling.

**Interactive eLearning:** Most of our courses are available as interactive eLearning modules. These modules follow the same content as instructor-led courses, but also contain instructional videos, multimedia content, simulations, and quizzes.

**Video Recordings:** We have thousands of hours of on-demand recorded course sessions, available to take whenever and wherever. These videos are easily accessible through the MicroStrategy Education Center, so you can train at your own pace and convenience.
PRIVATE CLASSES AND INDIVIDUAL EDUCATION

In addition to subscription-based access via Education Passes, our best-in-class education courses and certifications are available through private/custom instructor-led classes or through individual purchase:

Private and Customized Classes
We offer a range of options to have one of our experts deliver private training which can be further tailored to the specific needs of your organization. We use Education Services to cover the costs of preparing and customizing the content and delivering it at your location. The table below summarizes the estimated labor required for our private course delivery options:

<table>
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<tr>
<th>TYPE</th>
<th>DESCRIPTION</th>
<th>ESTIMATED LABOR</th>
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<tbody>
<tr>
<td><strong>Private Instructor-led</strong></td>
<td></td>
<td></td>
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<tr>
<td>(Existing Class or Certification)</td>
<td>Existing 2020 course and/or certification delivered privately on-premise or online. [up to 20 students]</td>
<td>8 hours per 1 day of instruction</td>
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<td><strong>Private and Custom Instructor-led</strong></td>
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<tr>
<td>(Customized Class)</td>
<td>Existing 2020 course customized with the customer's data, reports, dossiers, and cards. [up to 20 students]</td>
<td>24 hours per 1 day of instruction</td>
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<tr>
<td><strong>Private and Commissioned Instructor-led</strong></td>
<td>Education experience built from scratch. Instruction and workshops tailored to the customer's specific needs. [up to 20 students]</td>
<td>40 hours per 1 day of instruction</td>
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Individual Courses and Certifications
MicroStrategy courses and certifications can also be purchased individually through our MicroStrategy Education Center. Courses are $700 per course per day and can be purchased via credit card or customer invoice. We strongly recommend that students taking two or more courses purchase an Architect or Analyst Pass, which will save them money and give them access to a broader range of content.

CONTACT US
Our teams are happy to work with you to provide the right course offerings. To get started, speak with your Account Executive or contact the Education Department directly at education@microstrategy.com. You can also visit microstrategy.com/education to access the MicroStrategy Education Center, download our full course catalog, and get more details on our education offerings.
## ANALYST PASS

<table>
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<td>Enterprise Mobility Administration for Applications</td>
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<td>Introduction to Big Data</td>
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<td>Advanced Analytics Reporting</td>
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<td>Advanced Project Architecting</td>
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<td>Application Architect: Planning, Standardizing, and Implementing</td>
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<td>Mobile Architect: Planning, Implementing, and Optimizing</td>
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<td>Services Architect: Managing Custom Applications</td>
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<td>Database Architect (DBA) Certification</td>
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## ARCHITECT PASS

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<td>Advanced Dashboarding with Dossiers</td>
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# ANALYST LEVEL CERTIFICATIONS

**Analyst (ANL)**  
Create, share, and maintain intelligence applications for the department using enterprise security, data, and application objects to help ensure a single version of the truth.

**Data Scientist (SCI)**  
Build and publish advanced statistics, predictive models, and machine learning algorithms using libraries such as TensorFlow, R, Python, and MATLAB, which are leveraged often by Analysts and Developers.

**Developer (DVL)**  
Inject, extend, and embed intelligence into custom and third-party applications using common programming languages such as JavaScript, Java, PHP, Python, SWIFT, Objective-C, C#, .Net, and more.

# ARCHITECT LEVEL CERTIFICATIONS

**MicroStrategy Architect (MCA)**  
Create, share, and maintain intelligence applications for the enterprise. Build and maintain the schema objects and abstraction layer on top of various changing enterprise assets. Configure the Intelligence Architecture on-premises and/or in the cloud.

**Analytics Architect (ANA)**  
Create, publish, and optimize a federated data layer as the enterprise’s single version of the truth. Build and maintain the schema objects and abstraction layer on top of various changing enterprise assets.

**Application Architect (APA)**  
Create, share, and maintain intelligence applications for the enterprise. Publish standardized application objects and promote departmental applications from self-service into the enterprise environment.

**Mobile Architect (MBA)**  
Build, compile, deploy, and maintain mobile environments and applications. Optimize user experience when accessing applications via mobile devices. Integrate with preferred VPN, SSO, and EMM protocols.

**Services Architect (SVA)**  
Inject, extend, and embed analytics into portals, third-party, mobile, and white-labeled applications. Publish web services and data services for developers to use when building departmental applications.

**Database Architect (DBA)**  
Design and maintain database enterprise assets. Optimize database performance and usage based on query type, usage patterns, and application design requirements.

**Platform Administrator (PLA)**  
Install and configure the Intelligence Architecture on-premises and/or in the cloud. Maintain the security layer, monitor system usage, and optimize architecture to reduce errors, maximize uptime, and boost performance.

**System Administrator (SYA)**  
Set up, maintain, monitor, and continuously support the infrastructure environment through deployment on AWS, Azure, Windows, or Linux, all while optimizing performance and controlling costs.

**Intelligence Center Director (ICD)**  
Create Intelligence environments by deploying the Intelligence Architecture, supervising the Intelligence Center, and running Intelligence Programs to support enterprise and departmental analytics and mobility applications for all constituents.
COURSES FOR ANALYSTS

ANALYSTS
DATA SCIENTISTS
DEVELOPERS

Students with an Analyst Pass or Architect Pass can access all of the courses in this section.
What's New for Analysts (2 days)

Course description
Upgrade your knowledge from MicroStrategy 10 to version 11. Focuses on new capabilities for the analyst role. (This is also a great class for administrators to get ahead of new user workflows, and for SDK developers to learn new user actions.) Learn about enhanced reporting and visualization capabilities in Web and Mobile.

Skills you gain
- Learn new features and workflows
- Train others in your organization on new features and workflows
- Use new visualization and dashboarding capabilities
- Present interactive boardroom data
- Drill to details, sort data, and apply filters

MicroStrategy products covered
- MicroStrategy Analytics Platform
- MicroStrategy Mobile Platform

Right for you if
You have an interest in learning about new analyst features in MicroStrategy.

Best class experience if you have
Familiarity with MicroStrategy concepts and terminology.

Topics
1. Data Discovery
   - Dossier clients: Desktop and Web
   - Creating a dossier
   - Accessing a dossier everywhere: Library
   - Extending data discovery: HyperIntelligence
2. Data Governance
   - Publishing to the enterprise environment
   - Data value management
   - Designing and distributing dossiers
   - Expanding data utilization with MicroStrategy HyperIntelligence
   - Importing raw data and exporting governed information to other analytic tools: Federated analytics
3. Dashboarding and Visualizations
   - Derived objects
   - Analytical capabilities: Filters
   - Leverage the power of trusted data analytics: R Integration Pack
   - Dossier analysis and design
   - Creating storytelling workflows: Linking to dossiers, reports, and web pages
   - Visualization capabilities
   - Dossier sharing
   - Staying connected to your data: Dossiers on mobile devices
4. MicroStrategy Web
   - Reports and Report Services documents
   - Web SDK
5. MicroStrategy Mobile: Transformational Mobility
   - New features for iOS
   - New features for Android
   - Mobile SDK changes
11.112 Introduction to Analytics Reporting (2 days)

Course description
Create reports and the objects used on reports (filters, metrics, and prompts) with hands-on exercises. Transform datasets into appealing, insightful dossiers. Exercises use the MicroStrategy Web interface.

Skills you gain
- Analyzing organizational data to make effective business decisions
- Creating business reports
- Identifying appropriate business concepts to evaluate calculations
- Using calculations and measures to determine actionable business decisions
- Logically planning subsets of data for analysis using filtering techniques
- Designing business reports for other users with self-service features
- Sharing reports using export, print, or by subscribing to report deliveries
- Identifying and analyzing trends, anomalies, and other important meaning in your data

MicroStrategy products covered
- MicroStrategy Web

Right for you if
You are a beginning analyst who needs an introduction to basic report and object creation and wants an overview of dossiers and visualizations.

Topics
1. Foundation for creating reports
   - The Intelligence Center
   - Calculating business data: Metrics
   - Business context on a report: Attributes
2. Creating reports
   - Building reports based on pre-designed reports
   - Building reports using templates
   - Building reports from scratch
3. Filtering reports
   - Building filters to filter data on reports
   - Building prompts to allow user input
4. Calculating data on reports
   - Building metrics to calculate data
   - Building metrics within reports: derived metrics
5. Delivering and sharing reports
   - Exporting reports
   - Subscribing to reports for automatic delivery
   - Sending reports to other users
   - Bursting large reports into smaller files
   - Sharing a link URL reflecting latest changes and prompt answers with other users
6. Dossiers and visualizations
   - Adding data to your dossier
   - Displaying data as a visualization
   - Creating a grid visualization
   - Creating a bubble chart visualization
   - Filtering data on a dossier
   - Creating separate chapters and Filter panel filters
   - Sharing a dossier everywhere: Library on web and mobile devices
   - Creating separate chapters and Filter panel filters
   - Sharing a dossier everywhere: Library on web and mobile devices

Delivery method: 🔴 LIVE INSTRUCTOR LED 📚 eLEARNING 📺 VIDEO RECORDING
11.142 Dashboarding with Dossiers and Visualizations (2 days)

Course description
Import and refine data to create visually compelling, interactive data representations (visualizations). Format, analyze, filter, and layer the visualizations to create appealing, insightful dashboard-style dossiers through the MicroStrategy Web interface. Share your dossiers to collaborate with other users and access the dossiers on web and mobile devices.

Skills you gain
- Graphing techniques to identify and analyze trends, anomalies, and other important meaning in data
- Selecting the appropriate interactive graph to display data for a specific business analysis
- Converting raw data into a clean visual display to view quality and consistent information
- Organizing data in layers to connect similar information
- Creating logical patterns in data using filtering techniques
- Tagging colleagues and commenting

MicroStrategy products covered
- MicroStrategy Web
- MicroStrategy Library
- Library App on mobile devices

Right for you if
You are interested in learning about the basics of MicroStrategy dashboarding.

Topics
1. Getting started: Dashboarding and visualizations
   - Adding data to your dossier
   - Displaying data as a visualization
   - Filtering data on a dossier
   - When to use a dossier vs. a document
2. Importing data
   - Improving quality of data’s structure
   - Data wrangling
   - Importing data from different data sources
3. Visualizing your data
   - Creating visualizations
   - Heat maps
   - Maps: Displaying geographic data
   - Network visualizations
   - Pie charts
4. Filtering and layering data
   - Layers of data that are filtered differently: Chapters
   - Layers of data that are filtered the same: Pages
   - Using one visualization to filter the data in another visualization
   - Filtering on a dataset object: Object filters
   - Linking pages with visualizations: Page-to-page filters
5. Sharing dossiers everywhere
   - MicroStrategy Library on Web and mobile devices
   - Certifying dossiers
   - Staying connected to your data: Dossiers on mobile devices
11.213 SDK for Customizing Analytical Applications (2 days)

Course description
Learn how to take advantage of MicroStrategy Web APIs and SDKs to change Web behavior and look-and-feel. Learn how to embed dossiers in web pages and customize MicroStrategy Library.

Skills you gain
- Plan customizations for MicroStrategy Web
- Eclipse Integrated Development Environment
- Web Customization Editor
- Create custom pages and links
- Create custom plug-ins and Web beans
- CSS
- Embedding SDK
- Library SDK

MicroStrategy products covered
- MicroStrategy SDK
- MicroStrategy Web
- MicroStrategy Workstation
- MicroStrategy Library

Right for you if
You are a software developer or technically-inclined business analyst who wants to customize the MicroStrategy Web interface and add extra functionality.

Best class experience if you have
10.111 Overview of Enterprise Analytics
Introductory Java development
Some exposure to Eclipse

Topics
1. SDK: Extend, Integrate, and Embed
   - Target scenarios for the MicroStrategy SDK
   - Levels of customization
2. My First Plug-in
   - Plug-in architecture
   - Introducing Eclipse
   - Introducing the Web Customization Editor
   - Plug-ins best practices
3. Customizing menus
   - Contextual menus
   - Finding information about an event
   - Ribbons, menus, and toolbars
4. Embedding a dossier in a HTML page
   - How to embed a dossier
   - Location of the Embeddinglib library
5. Customizing Pages
   - MicroStrategy Web code
   - MicroStrategy Web architecture
   - Adding a new page
   - Page templates and sections
   - Page configuration
   - Page shortcuts
6. Blocks of Data: Web Beans
   - Beans folder and bean properties
   - Styles and beans
   - Adding and removing beans
7. Formatting Display: Cascading Style Sheets
   - Types of CSS
   - Customizing CSS files
8. Branding MicroStrategy Library
   - Reviewing the base plug-in
   - What you can customize
   - Design considerations
   - Using custom fonts with MicroStrategy Library
11.214 Introduction to Coding with MicroStrategy SDK (1 day)

Course description
Learn about HTML and CSS to prepare you to dive into other MicroStrategy SDK classes. Discover or just refresh your knowledge on the technologies behind MicroStrategy SDKs. Review key programming concepts and how the Web works.

Skills you gain
- Programming overview
- Programming attitude
- Programming Concepts
- Object oriented principles
- Write HTML
- Write CSS rules

MicroStrategy products covered
- MicroStrategy Web

Right for you if
You are a junior or aspiring software developer who wants to learn the underlying technologies of MicroStrategy SDKs.

Best class experience if you have
Overview of Enterprise Analytics

Topics
1. You are a developer
   • Inside a developer’s toolbox
   • Coding 101
2. Programming concepts
   • Expressions and statements
   • Perform a single action: Simple statement
   • Which statement is executed: Decision statement
   • Performing actions multiple times: Repetition statement
   • Combining statements: Procedures and functions
   • Object oriented programming basics
   • Algorithms
   • REST: Dialog between systems
3. How the Web works
   • How web pages work and its four pillars
   • Client-side vs server side
   • MicroStrategy Web processing a request
4. HTML
   • Defining web page structure: Tags
   • Base page
   • Levels of content: Headings
   • Links to content outside your page
   • Sections of a page: Div tags
   • iFrame and tables
5. CSS
   • Walk-through: Multiple styles, one HTML content
   • Locations of styles
   • Order of evaluation
   • Selectors
11.215 Embedding Analytics with MicroStrategy REST API (1 day)

Course description
Learn to leverage different APIs offered by MicroStrategy through REST end points. Embed dossiers in web pages with the Embedding API library, manipulate data objects from a custom application, and push your data into a data cube using your custom code with Push API.

Skills you gain
- MicroStrategy REST API Explorer
- JavaScript code
- JSON format
- cURL
- WinSCP and VNC

MicroStrategy products covered
- MicroStrategy REST API Explorer
- MicroStrategy Web
- MicroStrategy Library
- Push API
- Embedding API

Right for you if
You are a software developer who wants to learn how to use REST API end points in custom applications.

Best class experience if you have
Overview of Enterprise Analytics
SDK for Customizing Analytical Applications
JavaScript experience

Topics
1. Fundamentals in REST API
   - Developing in an intelligent enterprise
   - API 101
   - JSON as a communication format
   - Web services and REST
   - MicroStrategy RESTful APIs
2. Tools of the Trade
   - MicroStrategy REST API Explorer
   - cURL
3. Certify a Dossier
   - Certifying a dossier through REST
4. Embedding a Dossier in an HTML Page
   - Embedding SDK
   - How to embed a dossier
5. Creating Data using Push API
   - Push API
   - Using REST API to create a cube
   - Code walk-through
11.710 Introduction to Data Science (1 day)

Course description

Familiarize yourself with the data science process and the skills needed to be a data scientist. Explore MicroStrategy visualizations and how they can help you understand data distributions and trends. Integrate R, Python, and MicroStrategy for a complete data science toolkit. Learn Python basics, and improve your data in MicroStrategy and with Python code.

Skills you gain

- Thinking like a data scientist
- Working with histograms, box plots, and line charts
- Trend analysis
- Working with Python code in Jupyter Notebook
- Using Native R in MicroStrategy
- Using the mstrio-py library
- Python basics
- Improving data quality and structure

MicroStrategy products covered

- MicroStrategy Web
- mstrio and mstrio-py
- R Integration Pack

Right for you if

You are familiarizing yourself with basic data science techniques and tools, and want to leverage MicroStrategy's federated data and analysis capabilities in your data science workflow.

Best class experience if you have

Introduction to Analytics Reporting

Topics

1. Blending skills to enhance insights
   - Data science overview
   - Seeking insight with data science questions
   - CRISP-DM process
2. Exploring data
   - Histograms
   - Box plots
   - Line charts
3. Integrating data science tools
   - MicroStrategy federated data and libraries
   - R and Python
   - Using R within MicroStrategy: Native R
   - mstrio and mstrio-py
4. Using code to conduct data science: Python basics
   - Basic operations
   - Python collections
   - Dataframes
5. Improving data for analysis
   - Data quality and structure
   - Improving data code-free in MicroStrategy
   - Improving data with Python code
11.711 Data Mining and Predictive Analytics (2 days)

Course description
Develop predictive models and reports by leveraging native algorithms or by importing models from third-party data mining vendors like R and PMML, in hands-on exercises using MicroStrategy Developer. Learn data mining best practices.

Skills you gain
- Predictive modeling
- Forecasting
- Trend analysis
- Regression analysis
- Clustering and pattern analysis
- Market basket analysis
- R script integration
- Predictive Model Markup Language (PMML) integration
- Data classification
- Time series analysis
- Decision tree analysis

MicroStrategy products covered
- MicroStrategy Data Mining functionality in MicroStrategy Developer

Right for you if
You are an advanced analyst who needs to incorporate predictive and classification analysis into your metrics.

Best class experience if you have
Advanced Analytics Reporting

Topics
1. Data mining and predictive analytics overview
   - Purpose of data mining tools
   - Advantages of data mining
   - Introduction to MicroStrategy Data Mining Services
2. Data mining models and techniques
   - Basic data mining model
   - Data mining types and algorithms
   - Data mining with MicroStrategy
   - Creating a data mining dataset
3. Using data mining models with MicroStrategy
   - Using MicroStrategy predictive models
   - Using the training metric wizard to create a training metric
   - Developing models using PMML
   - Evaluating the predictive model
   - Developing models using R
   - Developing predictive metrics
   - Using the MicroStrategy predictive model viewer
4. Forecasting
   - Forecasting uses
   - Regression analysis
   - Linear and exponential regression
   - Tree regression analysis
   - Time series analysis
5. Classification
   - Decision tree analysis
   - Logistic regression analysis
6. Association
   - Association rules
7. Clustering
   - Cluster analysis
11.712 Advanced Data Science with MicroStrategy (1 day)

Course description
Integrate your data science workflows using Python, R, and MicroStrategy. Initiate, perform, and communicate complex analyses. Learn the benefits of intertwining the tools dedicated to data science with MicroStrategy mstrio library to seamlessly perform your data science goals. Get a deep dive into text analytics. Explore Deep Learning and comparing multiple models while conducting model optimization.

Skills you gain
- Fine-tune the integration of mstrio library in Python and R
- Use the Python platform with mstrio
- Use the R platform with mstrio
- Explore Deep Learning
- Analyze datasets using regression analysis and clustering
- Use Jupyter Notebook
- Perform text analytics

MicroStrategy products covered
- MicroStrategy Data Mining in MicroStrategy Developer
- MicroStrategy mstrio for Python and R

Right for you if
You are a data scientist or advanced analyst who wants to deepen your knowledge on MicroStrategy, R, and Python

Best class experience if you have
Advanced Analytics Reporting
Data Mining and Predictive Analytics

Topics
1. Better insight with fundamental questions
   - Data science and MicroStrategy
   - Ask the right questions
   - Use case: Analyzing bicycle sales
2. Data Science using Python & MicroStrategy
   - Import from MicroStrategy
   - Use Python with various techniques and models
   - Export to MicroStrategy
3. Data Science using R & MicroStrategy
   - Import from MicroStrategy
   - Use R with various techniques and models
   - Export to MicroStrategy
4. Text Analytics
   - Analyze text in MicroStrategy using R scripts
   - The sentiment analysis script
   - Build a movie review application
   - Get different metrics from the script
   - Text analytics in specific domains
   - Multiple models in Deep Learning
5. Customizing an R Script
   - In-band and Out-of-band results
   - Debug your scripts
   - Customize a MicroStrategy R script
   - Customize an R script for localization
6. Machine Learning and Neural Networks
   - Use machines and deep learning to solve problems
   - Process data features with neural networks
   - Analyze images with convolutional neural networks (CNNs)
   - Display predictions in MicroStrategy
COURSES FOR ARCHITECTS

ANALYTICS ARCHITECTS
APPLICATIONS ARCHITECTS
SERVICES ARCHITECTS
DATABASE ARCHITECTS
MOBILE ARCHITECTS
PLATFORM ADMINISTRATORS
SYSTEM ADMINISTRATORS
INTELLIGENCE CENTER DIRECTORS

Students with an Architect Pass can access all of the courses in this section.
**11.001 Zero-Click Analysis: MicroStrategy HyperIntelligence (1 day)**

**Course description**
A comprehensive overview to MicroStrategy HyperIntelligence, this training develops the skills to leverage MicroStrategy’s modern business intelligence discovery tool. Interact with HyperIntelligence in Chrome and HyperMobile to quickly and easily analyze trends and key performance indicators. Review the MicroStrategy architecture that powers HyperIntelligence cards. Learn best practices for HyperIntelligence card datasets and design. Understand how to deploy, secure, and manage HyperIntelligence across your organization.

**Skills you gain**
- Understand the HyperIntelligence Chrome extension and HyperMobile app
- Establish a successful HyperIntelligence architecture
- Design and manage card datasets
- Card design best practice principles
- Govern and secure HyperIntelligence
- Optimize deployment across the enterprise with the Chrome extension and HyperMobile

**MicroStrategy products covered**
- MicroStrategy HyperIntelligence
- MicroStrategy HyperMobile
- MicroStrategy Workstation

**Right for you if**
You want to deploy zero-click analysis across the organization.
You want to design best-in-class cards that deliver effective BI to users.

**Topics**
1. **Empower your organization with zero-click analysis**
   - Explore HyperIntelligence in Chrome
   - Explore HyperMobile
2. **Establish a successful HyperIntelligence environment**
   - The HyperIntelligence architecture
   - Configure Library for HyperIntelligence
   - Workstation: Create and control cards
   - Install Workstation and connect to your environment
3. **Build best-in-class HyperIntelligence cards**
   - HyperIntelligence card datasets
   - Define HyperIntelligence Card keyword attributes
   - Wrangle data for card building
   - Create a card with the basic template
   - Create a card with the profile template
4. **Manage and deploy HyperIntelligence**
   - Governance and security
   - Assign security privileges and filters
   - Use card security controls; certify cards
   - Blacklist websites from the extension
   - Enterprise-wide Chrome extension deployment
   - HyperMobile deployment
   - Monitor card usage and activity
11.003 What’s New for Analytics Architects (1 day)

Course description
Upgrade your knowledge from MicroStrategy 9 or 10, to version 11. Focuses on new capabilities for the Analytics Architect role. Discover expanded feature sets to help create new applications (projects), manage and assess usefulness of reporting objects, and learn to take advantage of new VLDB properties for optimum performance and database support.

Skills you gain
• Learn new features and workflows
• Train others in your organization on new features and workflows
• Create applications (projects)
• Manage reporting objects
• Understand new VLDB properties for optimizing report performance, control data aggregation, and leverage database functionalities

MicroStrategy products covered
• MicroStrategy Analytics Platform

Right for you if
You have an interest in learning about new Analytics Architect features in MicroStrategy.

Best class experience if you have
Familiarity with MicroStrategy concepts and terminology.

Topics
1. Data Governance
   • Creating new applications (projects)
   • Managing and assessing reporting objects
2. Dashboarding and Visualizations
   • Data management
   • Hierarchy reporting
3. MicroStrategy Intelligence Server
   • VLDB properties
   • In-memory analytics and gateways
11.004 What’s New for Administrators (1 day)

Course description
Upgrade your knowledge from MicroStrategy 9 or 10, to version 11. Focuses on new capabilities for the platform administrator role. Learn current best practices to connect to MicroStrategy Cloud and on-premises data storage systems. Discover expanded feature sets to help improve performance and comprehensively monitor the enterprise.

Skills you gain
- Learn new features and workflows
- Train others in your organization on new features and workflows
- Connect to MicroStrategy Cloud
- Manage users and groups
- Monitor system activity
- Update your security standards with Identity biometrics, configuration, and FastBadge

MicroStrategy products covered
- MicroStrategy Analytics Platform
- MicroStrategy Identity Platform

Right for you if
You have an interest in learning about new Platform Administrator features in MicroStrategy.

Best class experience if you have
Familiarity with MicroStrategy concepts and terminology.

Topics
1. Data Governance
   - Workstation: Unified authoring and administration platform
   - Connecting to MicroStrategy Cloud and on-premises data storage
   - Managing users and groups
2. MicroStrategy Distribution Services
3. Monitoring System Activity
   - Platform Analytics
4. MicroStrategy Identity
   - Security features
   - MicroStrategy Communicator
5. MicroStrategy Intelligence Server
   - Install and deploy the enterprise platform using the latest features and best practices
   - Change journaling
   - Authentication enhancements
   - Library Server and Collaboration Server configuration updates
   - Workload fencing
   - Gateway enhancements
   - Drivers and connectors enhancements
11.061 Application Architect—Planning, Standardizing, and Implementing the Intelligent Enterprise (2 days)

Course description

In this course, you will revisit foundation Business Intelligence application topics from a holistic approach of the Application Architect in an Intelligent Enterprise. The course focuses on the key competencies to help you succeed as an Application Architect. You will learn how to support your Intelligent Enterprise to produce best-in-class applications based on enterprise-level best practices.

Skills you gain

- Create corporate application design requirements and guidelines
- Guide application development with storyboards and prototypes
- Best practices for creating application objects and applications
- Certify and publish enterprise applications
- Support end users to resolve application issues and change requests
- Review application objects to optimize application performance
- Identify performance bottlenecks
- Optimize application reliability and usability

MicroStrategy products covered

- MicroStrategy Web
- MicroStrategy Workstation

Right for you if

You want to become the Application Architect at your organization to standardize, optimize, and manage MicroStrategy applications at the enterprise level.

Best class experience if you have

Have taken the foundation courses.

Topics

1. The Intelligent Enterprise
2. Standards for application design
   - Create enterprise application standards
   - Establish an enterprise caching strategy
3. Assess application requirements
   - Application planning with prototypes
4. Create and document the application
   - Standardize application object creation
   - Create the application
5. Publish applications and certify data
   - Certify applications for enterprise standards
   - Document applications
   - Publish applications to enterprise environment
   - Train and certify analysts
6. Operate and support applications and users
   - Monitor application statistics
   - Handle change requests
7. Optimize performance and stability
   - Identify performance bottlenecks
   - Improve performance with caching strategy
   - Optimize application reliability, usability
11.062 Analytics Architect — Planning, Standardizing, and Implementing the Intelligent Enterprise (2 days)

Course description

In this course, you revisit foundation project architecture and design topics from the Analytics Architect role in an Intelligent Enterprise. The course focuses on key competencies to help you succeed as an Analytics Architect and support your Intelligent Enterprise to produce a best-in-class analytics solution based on enterprise-level best practices.

Skills you gain

- Establish enterprise standards and project documentation
- Implement a project update tracking system
- Guide requirements gathering and data exploration
- Standardize the dimensional modeling process
- Create guidelines for schema object development
- Establish dataset creation standards
- Develop dataset monitoring and troubleshooting protocols
- Institute dataset performance optimization practices

MicroStrategy products covered

- MicroStrategy Developer and Web
- MicroStrategy Workstation
- MicroStrategy Enterprise Manager
- MicroStrategy Integrity Manager

Right for you if

You want to become the Analytics Architect at your organization to standardize the MicroStrategy project architecture development process at an enterprise level.

Best class experience if you have

Have taken the foundation courses.

Topics

1. The Analytics Architect role
2. Share knowledge with the enterprise
   - Documentation repository and training
3. Standardize requirements gathering
   - Direct data source research
   - Establish conventions and other policies
4. Guide the enterprise dimensional modeling process
   - Utilize a Fact Qualifier Matrix
   - Define logical and physical data models
5. Direct schema object development
   - Provide guidelines for fact and attribute creation, user hierarchy protocols
   - Solve complex reporting scenarios
6. Standardize dataset authoring
   - Standardize supporting objects, datasets
   - Establish update request system
7. Establish monitoring and troubleshooting guidelines
8. Define performance optimization protocols
   - Dataset optimization techniques, data transfer, memory consumption

Delivery method: 🔴 LIVE INSTRUCTOR LED 🔴 eLEARNING 🔴 VIDEO RECORDING
11.063 Mobile Architect—Planning, Implementing, and Optimizing (2 days)

Course description

Revisit foundation mobility topics from a holistic approach of the Mobile Architect in an Intelligent Enterprise. Focuses on key competencies to help you succeed as a Mobile Architect and support your Intelligent Enterprise to produce a best-in-class mobile solution based on enterprise best practices.

Skills you gain

• Create corporate mobile app design requirements and guidelines
• Leverage SDK for corporate branding
• Optimize Library Mobile
• Define an effective mobile architecture
• Implement mobile configuration best practices
• Understand Enterprise Mobility Management solutions such as AppConfig compliance and security configuration keys
• Secure a mobile environment
• App monitoring strategies
• Guide mobile performance improvement
• Optimize the app user experience

MicroStrategy products covered

• MicroStrategy Mobile
• MicroStrategy Mobile Administrator
• MicroStrategy Mobile SDK

Right for you if

You want to become the Mobile Architect at your organization to optimize, secure, and manage enterprise-level MicroStrategy Mobile.

Best class experience if you have

Have taken the foundation courses.
Bring a supported mobile device to class.
Install the latest Android Studio and MicroStrategy Android SDK.

Topics

1. The Intelligent Enterprise
2. Mobile application standardization
   • Mobile application requirements
   • Designing and documenting apps
   • Mobile SDK: Create customized apps
   • Embed corporate branding: Basic customizations
   • Data discovery: Library Mobile app
3. Mobile server, configuration, and security
   • Mobile server lifecycle management
   • Mobile authentication and security
   • Mobile configuration
   • Access your personal Library Mobile
4. Publishing mobile applications
   • Enterprise Mobility Management
   • Mobile app testing
   • Deploying mobile apps
   • Upgrading and updating Mobile SDK
5. Monitoring and troubleshooting
   • Report on user engagement: KPIs
   • Diagnostics and statistics
   • Troubleshooting
6. Optimizing the user experience
   • Mobile caching and app performance
   • Engaging users for app success
11.065 Services Architect—Standardizing and Managing Custom Applications (2 days)

Course description

Explore the software development process and related tasks like deployment and source control from a holistic approach of the Services Architect in an Intelligent Enterprise. This course focuses on the key competencies to help you succeed as a Services Architect. You learn how to support your Intelligent Enterprise to develop applications, components, and plug-ins based on enterprise best practices.

Skills you gain

- Create corporate application design requirements and guidelines
- Manage skills inventory of your team
- Guide application development with coding and commenting best practices
- Best practices for creating application objects and applications
- Standards for testing apps and components
- Best practices for source control, versioning, and branching
- Best practices for communicating internally and externally

MicroStrategy products covered

- MicroStrategy SDK
- MicroStrategy REST API

Right for you if

You want to become the Services Architect at your organization to standardize, optimize, and manage MicroStrategy development at the enterprise level.

Best class experience if you have

Have taken the foundation courses.

Topics

1. The Intelligent Enterprise
   - The Services Architect within the Intelligent Enterprise
2. Building a Productive Development Environment
   - The team and tools to support the enterprise
3. Intelligent Application Lifecycle Management
   - Software development documentation
   - Collaborative communication
   - Standardizing the application lifecycle
   - Risk management
   - Requirements, design, and testing processes
   - Standardizing software deployment
   - Monitoring and maintenance
   - Standardizing software deprecation
4. Design and coding standards
   - Post-code best practices
5. Controlling Code with Source Control
   - Intelligent source control in the team
   - Versioning
6. Publishing Work Internally and Externally
   - Communication outside the team
   - Internal communication
   - Operational data for developers and testers

Delivery method: LIVE INSTRUCTOR LED eLEARNING VIDEO RECORDING
11.066 Platform Administrator—Configuring, Managing, and Optimizing (2 days)

Course description
In this course, you will revisit the foundation platform administration topics from a holistic approach of the Platform Administrator in an Intelligent Enterprise. The course focuses on the key competencies to help you succeed as a Platform Administrator, by supporting your Intelligent Enterprise in providing a well-tuned and stable analytics platform environment.

Skills you gain
- Create corporate guidelines for platform administration
- Guide the deployment, configuration, monitoring, tuning, and troubleshooting of a MicroStrategy analytics environment using best practices
- Manage project lifecycle and cross-environment object migration planning

MicroStrategy products covered
- MicroStrategy Intelligence Server
- MicroStrategy Command Manager
- MicroStrategy Object Manager
- MicroStrategy Web
- MicroStrategy Platform Administrator
- MicroStrategy Integrity Manager
- MicroStrategy License Manager

Right for you if
You want to become the Platform Administrator at your organization to optimize, secure, and manage the MicroStrategy enterprise platform.

Best class experience if you have
Have taken the foundation courses.

Topics
1. The Intelligent Enterprise
2. Standardizing the Intelligent Platform
   - Intelligent Enterprise standards
   - Standardizing requirements gathering
3. Platform Administration Planning
   - Platform architecture
   - MicroStrategy deployment options
   - MicroStrategy Workstation
   - Importing data from Impala
4. Platform Configuration
   - Configuring connectivity, platform security, and Distribution Services
5. Object Migrations
   - Managing project lifecycle
   - Implementing object migrations
   - Best practices for object migrations
6. Platform Monitoring
   - Platform Analytics
   - Using Integrity Manager
   - Using License Manager
7. Troubleshooting
   - MicroStrategy Diagnostics and Performance Logging tool
   - Analyzing log files
   - Diagnostics and statistics
   - Using the DB Query tool
8. Platform Optimizations
   - Product placement considerations
   - Optimizing systems for performance
11.067 Intelligence Center Director—Leading the Intelligent Enterprise (1 day)

Course description
This course is ideal for those running a BI group—directors, VPs, and executives growing a successful Intelligence Center with the MicroStrategy platform. Learn to lead the Intelligence Center by creating intelligence environments and running programs to support departmental and enterprise analytics applications. Transform your BI and become a change advocate for intelligent, competitive analytics in your organization.

This class is available through the Architect pass.

Skills you gain
- Establish corporate requirements and guidelines for business intelligence
- Understand how to develop an Intelligence Center
- Create effective programs for the Intelligent Enterprise architecture and end users
- Create a foundation for trusted analytics
- Understand architecture and performance
- Optimize user experience to promote BI adoption

MicroStrategy products covered
- MicroStrategy Web, HyperIntelligence
- MicroStrategy Developer, Workstation

Right for you if
You want to establish standards, optimize performance, increase BI adoption, and help establish an Intelligent Enterprise across your organization.

Best class experience if you have
Have taken the foundation courses.

Topics
1. Build a more Intelligent Enterprise
   - The path to the Intelligent Enterprise
   - Your role as the Intelligence Center Director
2. Establish processes and standards
   - Evaluate your organization
   - Intelligent programs: Standards for success
   - Foundational programs: Establish the Intelligent Enterprise architecture
   - Developmental programs: Create powerful applications for end users
3. Develop a successful team with the Intelligence Center
   - Set up the Intelligence Center
   - Establish service-level agreements
   - Track KPIs to drive performance
   - Team empowerment and BI adoption
   - Enhance organizational communication with HyperIntelligence
4. Implement the Intelligence Center and programs
   - Initiate the Intelligent Enterprise strategy
   - Trusted and governed analytics
   - Leverage federated analytics
   - Promote data usage across the enterprise
   - Support departmental analysts
   - Strengthen executive sponsor support
5. Maintain and monitor the Intelligent Enterprise
   - Establish a monitoring and maintenance strategy
   - Review architecture and performance
   - Manage and verify your licenses
6. Optimize the user experience
   - Drive user adoption through availability, reliability, and performance
   - Automated distribution and alerting
   - Implement a successful upgrade methodology
11.068 System Administrator—Planning and Optimizing the Analytics Infrastructure (2 days)

Course description
In this course, you will revisit the foundation system administration topics from a holistic approach of the System Administrator in an Intelligent Enterprise. The course focuses on the key competencies to help you succeed as a System Administrator, by supporting your Intelligent Enterprise in providing a well-tuned and stable analytics infrastructure.

Skills you gain
• Create corporate guidelines for system administration
• Guide the deployment, configuration, monitoring, tuning, and troubleshooting of a MicroStrategy analytics infrastructure using best practices
• Create backup, recovery, and failover plans for your analytics infrastructure

MicroStrategy products covered
• MicroStrategy Intelligence Server
• MicroStrategy Workstation
• MicroStrategy Cloud Console

Right for you if
You want to become the System Administrator at your organization to optimize, secure, and manage the MicroStrategy enterprise infrastructure.

Best class experience if you have
Have taken the foundation courses.

Topics
1. The Intelligent Enterprise
   • The Intelligence Center and the System Administrator
2. Sharing Knowledge with the Enterprise
   • Coordinate with fellow architects
   • Create a documentation repository
   • Establish a training schedule
3. Laying the foundation and creating your infrastructure
   • Identifying operating systems
   • Selecting hardware resources
   • Establishing a network architecture
   • Maintaining user information
   • Establishing a repository for system files
   • Connecting to data sources
4. Publishing environment details
   • Creating topology diagrams
   • Documenting operating procedures
   • Distributing Service Level Agreements
   • Capturing server activity
5. Monitoring and Optimizing the Infrastructure
   • Discovering and fixing hardware deficiencies
   • Fine-tuning network performance
   • Providing troubleshooting support
6. Maintaining the Infrastructure
   • Maintaining hardware
   • Establishing fault-tolerant environments
11.069 Database Architect—Standardizing and Managing Enterprise Databases (2 days)

Course description
In this course, you will learn about the foundation of database management systems, including big data architecture and technologies to design and maintain database enterprise assets. You will learn about relational, and distributed data warehouse topics from a holistic approach of the Database Architect in an Intelligent Enterprise. The course focuses on the key competencies to help you succeed as a Database Architect, by supporting your Intelligent Enterprise in providing well-tuned data pipelines, and a stable data warehouse platform environment.

Skills you gain
• Create corporate guidelines for platform administration
• Guide the deployment, configuration, monitoring, tuning, and troubleshooting of a MicroStrategy analytics environment using best practices
• Manage project lifecycle and cross-environment object migration planning

MicroStrategy products covered
• MicroStrategy Intelligence Server
• MicroStrategy Big Data Connectors
• MicroStrategy Web
• MicroStrategy Workstation

Right for you if
You want to become the Database Architect at your organization to optimize database performance and utilization based on query type, usage patterns, and application design requirements.

Best class experience if you have
Have taken the foundation courses.

Topics
1. Shaping the Intelligent Enterprise
   • The Intelligence Center and the Database Architect role
2. Knowledge Discussions with Enterprise Team
   • Intelligent Enterprise standards
   • Standardizing documentation and data model repositories
3. Big Data Analytics
   • Implementing big data analytics using Hadoop and Hive
   • Apache Hadoop core component installation and configuration, including HDFS, MapReduce, and YARN
   • Performance tuning Hive
4. Data Warehouse Performance Tuning
   • Improve query performance using various data processing and storage techniques related to distributed datasets
5. Database Optimization
   • Database optimization strategies employing aggregation, partitioning, and indexing
6. Data Integration and Migration
   • Migrating data form MySQL to SQL Server database using Talend Open Studio
   • Live data ingestion with Python
7. Enterprise Data Lakes
   • Introduction to data lakes
11.111 Overview of Enterprise Analytics (2 days)

Course description

Build a basic analytics application through hands-on exercises. Start with the components of an analytics architecture, then learn about development, deployment, and simple administrative features. Covers the fundamentals of enterprise analytics and builds the knowledge base necessary for the more advanced courses offered for analysts, developers, and administrators.

Skills you gain

• Using business intelligence product offerings
• Creating simple reporting objects
• Planning data warehouse and reporting object mapping
• Creating basic reports, documents, and dossiers
• Understanding the project life cycle
• Creating objects on the fly (derived objects)
• Deploying a simple app to a mobile device
• Viewing a document on a mobile device
• Understanding where data comes from and what you can do with it

MicroStrategy products covered

• MicroStrategy Developer
• MicroStrategy Web
• MicroStrategy Mobile
• Various project design and administration tools

Right for you if

You are an analyst, SDK developer, or administrator who has an interest in learning about MicroStrategy business intelligence products.

Topics

1. MicroStrategy Intelligence Platform
   • Interact with your business data
   • Grid reports: Basic data analysis
   • Create an interactive document: Visualize and interact with your data

2. Data: The foundation of business intelligence
   • Analyze data with MicroStrategy
   • Using a data warehouse: MicroStrategy metadata
   • MicroStrategy architecture

3. Build and store your objects: MicroStrategy projects
   • Introduction to MicroStrategy projects
   • Project life cycle

4. Advanced reports and documents
   • Limiting data on the report: Filters
   • Calculating data on the report: Metrics
   • Grouping attribute elements: Custom groups
   • Interacting with your data: Interactive documents

5. MicroStrategy Mobile

6. SDK overview

7. MicroStrategy Identity
   • Identity platform
   • Platform analytics

8. MicroStrategy administration
   • MicroStrategy Web administration
   • Security
   • Monitoring
   • Automation with Command Manager and System Manager
11.121 Overview of Enterprise Mobility (2 days)

Course description
Build basic enterprise mobile applications using MicroStrategy tools. Covers the fundamentals of enterprise mobility and builds the knowledge base necessary to tackle the more advanced courses offered for analysts, developers, and administrators. The majority of this course will be hands-on, performing basic mobile application design, development, and deployment.

Skills you gain
- Design principles for mobile apps
- Creating documents with interactive graphs
- Creating mobile configurations
- Adding mobile-specific features to a document
- Creating and deploying a mobile app to a mobile device
- Understanding of the mobile app development lifecycle
- Storyboarding
- Mobile architecture basics
- Optimizing dossiers for mobile platforms

MicroStrategy products covered
- MicroStrategy Mobile platform

Right for you if
You are an analyst who needs to create mobile apps to provide documents on mobile devices.

Best class experience if you have
11.111 Overview of Enterprise Analytics
11.141 Introduction to Documents
A supported mobile device.

Topics
1. Plan and design a MicroStrategy Mobile app
   - User-centered design
   - Select the platforms to support your app
   - Graphic design considerations
   - Design best practices for tablets
   - Design best practices for smartphones
   - Create, develop, and test your app
2. Create a Mobile app
   - The business scenario
   - App components
   - MicroStrategy links
   - Building the Sales Performance app
   - Creating the documents: Adding objects
   - Adding interactive elements to the app
   - Layering and grouping data in the app
3. MicroStrategy Library Mobile App
   - Create dossiers and optimize them for mobile devices
4. Extend Mobile capabilities
   - Transaction Services
   - Mobile SDK
5. Administration and app deployment
   - The Mobile client
   - Mobile architecture
   - Mobile configuration
   - Mobile app deployment
   - Additional Mobile features
**11.141 Introduction to Documents (2 days)**

**Course description**

Create Report Services documents to satisfy sophisticated information requirements. Display grids, graphs, text, and images. Transform data into an appealing, insightful presentation for financial reports, budgets, and invoices. Hands-on exercises to create a basic document, then build on the basics to create a grouped document to fine-tune information display, to create a logical workflow to make business decisions.

**Skills you gain**

- Creating boardroom-quality business documents
- Analyzing organizational data to make effective business decisions
- Identifying appropriate business concepts to evaluate calculations
- Logically planning subsets of data for analysis using grouping and custom sections
- Designing business reports for other users
- Adding data from a MicroStrategy report or an external data source
- Sharing documents using collaborative notes

**MicroStrategy products covered**

- MicroStrategy Web
- MicroStrategy Report Services

**Right for you if**

You are a beginning analyst who needs an introduction to document design.

**Best class experience if you have**

Overview of Enterprise Analytics or Introduction to Analytics Reporting

**Topics**

1. Overview of documents
   - Creating a simple document
   - When to use each view: Summary
2. Adding data to documents: Datasets
   - Importing from an external data source
3. Displaying data and text on documents
   - Labeling your data: Static text
   - Displaying dataset objects: Dynamic text
   - Organizing and designing your document: Document sections
   - Displaying: Auto text
   - Adding sections to the document
   - Displaying images
   - Delineating areas: Lines and rectangles
   - Arranging and formatting objects
4. Displaying reports on documents
   - Displaying data as a report
   - Using report title bars
   - Editing the report data
   - Formatting reports
5. Grouping documents: Creating custom sections
   - Organizing and sorting documents by grouping
   - Grouping: Creating custom sections
   - Changing how groups are displayed
   - Disabling group selection
6. Collaborating: Sharing insights
   - Sharing comments using the Notes pane
   - Subscribing for automatic delivery
   - Sharing documents with other users

**Delivery method:**  LIVE INSTRUCTOR LED  eLEARNING  VIDEO RECORDING
11.221 SDK for Customizing iOS Applications (2 days)

Course description

Develop a deep understanding of MicroStrategy Mobile APIs & SDKs. Customize a MicroStrategy Mobile iOS app for organizational identity, image, and messaging. Learn techniques for customizing app response and behavior.

Skills you gain

- Understand Apple’s Xcode IDE
- Identify the components and design of MicroStrategy’s Mobile architecture
- Generate branding assets
- Rebrand the MicroStrategy Mobile app by implementing new icons, splash screens, intro animations, and custom fonts
- Create mobile configurations for different devices
- Embed mobile configurations in the app
- Create a custom AppDelegate

MicroStrategy products covered

- MicroStrategy Mobile
- MicroStrategy Library Mobile
- MicroStrategy SDK
- MicroStrategy Web

Right for you if

You want to customize the iOS Mobile app, add functionality on both the client and server side, and use the Mobile platform to its full potential.

Best class experience if you have

Taken SDK for Customizing Analytical Applications and Overview of Enterprise Mobility

Familiarity with iOS environment, Objective-C, Swift, Java, HTML, CSS, and JSON files

Topics

1. Discover and install MicroStrategy Mobile SDK
   - What is MicroStrategy SDK?
   - MicroStrategy Mobile overview
   - Mobile SDK
   - Levels of customization
2. Introduction to Xcode
   - Xcode overview
   - Walk-through: My first Xcode Swift application
   - MicroStrategy Mobile architecture
3. Customize mobile configurations and branding
   - Pre-configure the mobile app
   - Add credentials to the configuration
   - Change the app icons and splash screen
   - Add an intro animation to the app
   - Use custom fonts
4. Create a custom AppDelegate
   - MicroStrategy Mobile’s appDelegate
   - Create a custom appDelegate
   - Add functionality to the appDelegate
5. Use Command Center for mobile
   - Use cases and scope
   - Set up Command Center
   - Use Command Center
   - Pre-configure the Library app
   - Change the application icons

Delivery method:  📚 LIVE INSTRUCTOR LED  🚛 eLEARNING  🎬 VIDEO RECORDING

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11.311 Administration for Enterprise Analytics (3 days)

Course description

Deploy, manage, and secure a MicroStrategy Enterprise Analytics environment. Optimize and automate common administrator tasks, and monitor the MicroStrategy environment using various administration tools and features. Includes hands-on exercises in an enterprise analytics Cloud environment.

Skills you gain

- System tuning based on business requirements
- Project lifecycle management and cross-environment object migration planning
- Automated script development
- Security planning based on corporate security requirements
- Implementing user credential and authentication rules
- Versioning and object change auditing

MicroStrategy products covered

- MicroStrategy Developer
- MicroStrategy Workstation
- MicroStrategy administration tools

Right for you if

You are an administrator who wants to fully administrate a complete MicroStrategy environment.

Best class experience if you have

Overview of Enterprise Analytics

Topics

1. MicroStrategy Analytics Platform overview
2. Installing MicroStrategy
   - MicroStrategy deployment options
   - Intelligence Server installation and activation
3. MicroStrategy Workstation
   - Managing environments and objects
   - User security
4. Connectivity
   - Analytics architecture
   - Two-tier, three-tier, and four-tier environments
5. Configuring the analytics environment
   - Managing system resources
   - Monitoring and governing projects
6. Optimizing system performance
   - Caching and Intelligent Cubes
   - Scheduling and subscriptions
7. Managing user authentication
   - Configuring Identity authentication
   - Account security policy
8. Managing user security and access
   - Groups, users, and security roles
   - Managing access to data and objects
   - Connection mapping
   - Security filters and Access Control Lists
9. Managing the project life cycle
   - Migrating objects across environments
   - Object Manager migration methods
10. Managing data integrity
11. Automating administrative tasks
    - Automating tasks with Command Manager scripts
    - System Manager workflows
12. Tracking changes with change journaling
11.312 Administration for MicroStrategy on Cloud (2 days)

Course description

Learn the tasks involved in administering the MicroStrategy platform in the MicroStrategy on AWS environment, using the self-service as well as the fully-managed deployment options. You will learn how to manage user security, establish connectivity, monitor project activity, and configure the environment for optimal performance and security.

Skills you gain

- Cloud architecture
- Provisioning and managing MicroStrategy on AWS cloud environments
- Security in a cloud environment
- System performance optimization
- Scheduling administration tasks in a cloud environment
- User authentication
- System monitoring

MicroStrategy products covered

- MicroStrategy on AWS, including MicroStrategy Developer, Workstation and MicroStrategy Web

Right for you if

You are an administrator who wants to administer your MicroStrategy system in a cloud environment.

Best class experience if you have

Overview of Enterprise Analytics

Topics

1. Introduction to MicroStrategy Platform
   - Platform overview, components, tools, and deployment options
2. MicroStrategy on AWS
   - Configuration options
   - Deploying and managing AWS environments
   - Security in AWS environment
3. MicroStrategy Workstation
   - Managing environments and objects
   - Configuring user security
4. Managed AWS environment
   - MicroStrategy on AWS services
   - Cloud team and customer responsibilities
   - Environment management
5. Connectivity
   - Four-tier analytics architecture
6. Managing user security and access
   - Groups and users
   - Managing access to data and objects
   - Connection mapping
   - Security filters and roles
   - Access Control Lists
7. Managing system performance
   - Caching and Intelligent Cubes
   - Scheduling and subscriptions
8. Monitoring system activity
   - Enterprise Manager workflow and architecture
   - Enterprise Manager configuration and best practices
9. Migrating to Cloud
11.313 Introduction to Big Data (1 day)

Course description

Understand big data from the ground up, including structured, unstructured, and semi-structured data attributes of big data, as well as use cases. Get specific experience with Hadoop's ecosystem, as well as MicroStrategy data integration, federation, modeling, preparation, and certification support. Provides details to integrate MicroStrategy with Hadoop, as well as self-service and integration with Salesforce.

Skills you gain

- Big data ecosystem
- Data retrieval from Hadoop
- Web Services integration using XQuery
- Reporting in a big data environment
- Data retrieval from Apache Spark, Hive, and Drill
- Data retrieval from Presto
- SQL on Hadoop

MicroStrategy products covered

- MicroStrategy Developer

Right for you if

You are a business intelligence professional interested in learning about big data and leveraging MicroStrategy for a comprehensive big data solution.

Best class experience if you have

Overview of Enterprise Analytics

Topics

1. Overview of big data and Hadoop
2. Working with Hadoop and MicroStrategy
   • Working with Hadoop distributions
   • MicroStrategy-Hadoop connectivity options
   • SQL on Hadoop
   • Connecting MicroStrategy to HDFS: Hadoop Gateway
   • Web services integration
3. Working with Spark Processing Engine and MicroStrategy
   • Spark overview
   • Spark architecture
   • Connect MicroStrategy to Spark
11.314 Working with MicroStrategy in Linux (1 day)

Course description
This class touches on the basics of Linux, then covers deployment of the MicroStrategy Analytics platform in a Linux environment to learn the directory structure, location of MicroStrategy utilities, and how to take advantage of them. Learn the various tools and features available for managing, performance tuning, and troubleshooting your Linux environment.

Skills you gain
- Understanding the deployment process, best practices, and directory structure in a Linux environment
- Using the best tools to establish platform connectivity and manage your Linux environment
- Sharing resources in a clustered Linux environment
- Using call stacks, log files, and tracing for troubleshooting

MicroStrategy products covered
- MicroStrategy Intelligence Server
- MicroStrategy Web
- MicroStrategy Mobile

Right for you if
You are a MicroStrategy administrator who wants to manage the MicroStrategy Analytics platform in a Linux environment.

Best class experience if you have
Administration for Enterprise Analytics

Topics
1. MicroStrategy Analytics Platform for Linux
   - Overview of MicroStrategy Analytics platform
   - Linux basics and tools
2. Installation in a Linux environment
   - Installation process
   - Directory structure
   - Multiple installations
   - Deploying .war files and Web servers
   - Installation best practices
   - Configuring analytics environment
   - MicroStrategy tools for Linux
3. Administering MicroStrategy
   - Managing Intelligence Server
   - Monitoring project activity
   - Governing
   - Job prioritization
   - Clustering in Linux environment
   - Administering MicroStrategy Web Universal
   - Administering MicroStrategy Mobile
4. Performance tuning and troubleshooting
   - Tuning Linux
   - Tuning MicroStrategy Web and application servers
   - Tuning Intelligence Server
   - Troubleshooting
11.321 Administration for Enterprise Mobility (1 day)

Course description
Gain practical knowledge necessary to deploy, configure, manage and optimize the performance of mobile applications either on-premise or via MicroStrategy on AWS.

Skills you gain
- SSO authentication configuration in a mobile environment
- Mobile app deployment options
- Mobile architecture
- Error handling in a mobile environment
- Security in a mobile environment
- Mobile subscription creation
- Mobile performance improvement strategies
- Troubleshooting mobile issues

MicroStrategy products covered
- MicroStrategy Mobile
- MicroStrategy Mobile Administrator

Right for you if
You are an administrator who wants to optimize, secure, and manage a MicroStrategy Mobile environment.

Best class experience if you have
Overview of Enterprise Mobile supported mobile device

Topics
1. Introduction to Mobile administration
   - Architecture
   - Clients
   - Deploying apps
   - Server installation
   - Generating a configuration link
   - Privileges and permissions
   - Enabling single sign-on authentication

2. Subscriptions
   - Scheduling and subscriptions
   - Creating schedules
   - Alerting
   - Subscription Creation Wizard
   - Subscription Manager
   - Subscription information and governors
   - Error handling

3. Mobile security
   - Mobile device, data, and app security
   - Authentication
   - Analytics platform security
   - Groups and users
   - Privileges and security roles
   - Project level security
   - Managing access to MicroStrategy objects

4. Mobile performance and troubleshooting
   - Mobile performance improvement strategies
   - Troubleshooting
   - Diagnostic logs
   - Configuring diagnostics
11.411 Project Architecting (3 days)

Course description
Create and maintain the foundation of an enterprise analytics application by developing a physical schema and logical model from single, multiple, or heterogeneous data sources. Develop core objects of the reporting infrastructure such as attributes, facts, hierarchies, and mappings to data warehouse tables. Leverage advanced options to build the infrastructure for efficiency and performance.

Skills you gain
• Logical data modeling
• Data warehouse schema development
• Project life cycle management
• Schema management
• Aggregate table development
• Multisource report development
• Partitioning
• Business intelligence project design

MicroStrategy products covered
• MicroStrategy Architect

Right for you if
You are a project designer or advanced analyst who wants to learn the process of creating a project foundation.

Best class experience if you have
Overview of Enterprise Analytics

Topics
1. Architecting the MicroStrategy schema
   • MicroStrategy project life cycle
   • Creating a logical data model
   • Data warehouse physical schema design
   • Creating a MicroStrategy schema
2. Managing the MicroStrategy schema
   • Modifying facts
   • Aggregate tables
3. MicroStrategy Multisource Option
   • Primary and secondary database instances
   • Support for duplicate tables
   • SQL generation for multisource reports
   • Supported use cases
4. Advanced design features
   • Fact level extension
   • Partitioning
   • Data importing
   • Logical view creation
   • Attribute role configuration
**11.412 Advanced Analytics Reporting (2 days)**

**Course description**
Build advanced objects (metrics, filters, derived elements, custom groups) to develop complex analytical reports. Bring your reports to the next level with more detailed information using advanced analytics, to glean valuable insights by manipulating your raw data.

**Skills you gain**
- Create level metrics to compare contributions
- Create transformation metrics to offset time values
- Filter data with dynamic dates, by combining elements from different attributes, and using pass-through functions
- Create attributes and metrics on the fly in reports
- Create virtual attributes to define how data is grouped and displayed on reports
- Optimize performance with Intelligent Cubes
- Determine the order of calculation
- Determine how data source tables are joined to produce specific results

**MicroStrategy products covered**
- MicroStrategy Developer and Web

**Right for you if**
You are an advanced analyst who needs to support complex reporting needs.

**Best class experience if you have**
Introduction to Analytics Reporting
Overview of Enterprise Analytics

**Topics**
1. Introduction to advanced analytics
   - Reports and the Intelligent Enterprise
2. Creating metrics in reports
   - Ranking metric values
   - Time-based comparisons: Transformation metrics
   - Changing the attribute level for calculations: Level metrics
   - Calculating metrics at different levels on a report: Dynamic aggregation
3. Advanced attributes
   - Applying a different filter to each report row: Custom groups
   - Grouping attribute elements on the fly: Derived elements
4. Advanced filters: Filtering data on reports
   - Comparing two attributes: Attribute-to-attribute filtering
   - Filtering with dynamic dates
   - Combining elements from different attributes: Joint element list
   - Importing filter elements
   - Pass-through functions
   - Metric qualifications
   - Relationship filters
5. Improving Performance: Intelligent Cubes
6. Advanced reporting options
   - Report data options
7. Base formulas and advanced subtotals
   - Reusing metric formulas for consistency and time-saving: Base formulas
   - Customizing subtotals: Advanced subtotals
8. Advanced metrics
   - Counting objects: Count metrics
   - Advanced functions in metrics
11.413 Advanced Documents: Interactivity and Joining Datasets (2 days)

Course description

Create documents to combine data from multiple sources in a pixel-perfect format. Allow end users to interact with documents using selectors, panels, and widgets. The majority of this course is hands on using MicroStrategy Web in a Cloud environment.

Skills you gain

• Creating a document with pixel-perfect formatting
• Adding interactivity to documents
• Combining data from multiple sources in a single document and specifying data joins
• Layering data and multiple documents
• Linking documents to other documents, reports, and web pages
• Designing documents for multiple users
• Combining metrics from multiple datasets

MicroStrategy products covered

• MicroStrategy Report Services in MicroStrategy Web

Right for you if

You are an advanced analyst who needs to create documents to combine data from multiple sources, provide interactivity, and control formatting down to the pixel.

Best class experience if you have

Introduction to Analytics Reporting
Overview of Enterprise Analytics
Introduction to Documents

Topics

1. Introduction to documents
   • Interactive documents
   • Creating a simple document
2. Creating a document
   • Document Editor
   • Document objects
   • Arranging and formatting objects
   • Designing with document sections
   • Creating a document
3. Advanced document options
   • Using templates
   • Adding MicroStrategy reports
   • Creating metrics in a document
   • Creating layers of documents: Multi-layer documents
   • Opening documents, reports, and web pages from a document: Linking
   • Highlighting data that meets thresholds: Conditional formatting
   • Tooltips: Providing additional information
4. Adding data to documents: Datasets
   • Providing the data displayed on documents
   • Using multiple datasets
   • Reports that use multiple datasets
   • Calculated expressions: Combining metrics from multiple datasets
5. Interactive documents
   • Dashboard design techniques and tips
   • Document objects to provide interactivity
   • Creating an interactive document
11.414 Designing Metrics for the Intelligent Enterprise (1 day)

Course description
Develop enterprise metrics such as level and transformation metrics for use on analytical reports. Work with filters to create conditional metrics. Implement data governance by creating base metrics. The majority of this course is hands-on using MicroStrategy Web in a Cloud environment.

Skills you gain
- Create time-based comparisons with transformation metrics
- Create level metrics to compare contributions
- Present inventory data with non-aggregatable metrics
- Create conditional metrics to filter your calculations
- Select the function used for dynamic aggregation, when attributes are removed on the fly from a report

MicroStrategy products covered
- MicroStrategy Web

Right for you if
You are a metric designer who focuses on designing enterprise metrics for all departments across the enterprise to use in their various reporting needs.

Best class experience if you have
Introduction to Analytics Reporting
Overview of Enterprise Analytics
Advanced Analytics Reporting

Topics
1. Introduction to enterprise metrics
   - Calculating business data: Metrics
   - Reusing metric formulas for consistency and data governance: Base metrics
2. Transformation metrics
   - Time-based comparisons
3. Level metrics
   - Changing a metric’s calculation level
   - Defining a level
   - Defining whether the level metric aggregates (groups) by the target attribute
   - Defining the level metric’s relationship with the report filter
   - Combining aggregation and filtering options to create a level metric
   - Interacting with the context of reports: Report level
   - Creating metrics with the Formula Editor
   - Nested metrics: Multiple formulas with different levels in a single metric
4. Non-aggregatable metrics
   - Inventory metrics
5. Conditional metrics
   - Applying filters to metrics
   - How conditional metrics and report filters interact
   - Ignoring related report filter elements
   - Merging metric and report filters
6. Dynamic aggregation
   - Calculating metrics at different levels on a report
   - Changing the dynamic aggregation function of metrics
11.415 Advanced Dashboarding with Dossiers (2 days)

Course description
Import complex data to enhance visually-compelling, interactive data representations (visualizations). Create new objects by grouping attribute elements and creating new attributes and metrics based on dataset objects. Build a story about your data to help your users make accurate, timely business decisions.

Skills you gain
- Import and refine data from in-memory and prompted datasets
- Join multiple datasets to display accurate values
- Create new dossier objects based on existing dataset objects
- Improve story-telling capabilities by linking to external content and to other dossiers
- Improve the user experience with advanced functionality
- Identify relationships and patterns to surface to your users
- Extend visualizations with HyperIntelligence

MicroStrategy products covered
- MicroStrategy Web
- MicroStrategy Workstation

Right for you if
You want to extend dossiers by manipulating your data to present complex, rich stories to other users to make informed business decisions.

Topics
1. Federated data in modern analytics
2. Importing data
   - Creating a dataset report in a dossier
   - Importing prompted reports
   - Importing data from a database
   - Joining multiple datasets
   - Updating data by republishing
3. Customizing the display of business data
   - Grouping attribute elements
   - Creating attributes based on dataset attributes: Derived attributes
4. Designing on-the-fly business calculations
   - Aggregating metrics to create subtotals
   - Combining multiple metrics
   - Applying shortcut functions
   - Creating derived metrics from scratch
   - Creating filtered metrics: Conditional metrics
   - Changing the attribute level for calculations: Level metrics
   - Changing aggregation and subtotal behavior
5. Displaying and filtering data
   - Highlighting values that meet conditions
   - Finding the right visualization: Custom visualizations
   - Extending visualizations: HyperIntelligence
   - Creating stories about data using links
   - Displaying data that users need: Filters
6. HyperIntelligence in an agile environment
   - Moving to the Intelligent Enterprise
   - Extending data discovery with HyperIntelligence
11.421 Advanced Mobile Applications (1 day)

Course description
In hands-on exercises, create two interactive documents and a dossier, and link them together to create a mobile app. Use a variety of Mobile widgets and interactive document components. Learn about advanced mobile application features such as docked panel selectors, navigation templates, and cutting-edge Mobile widgets. Create custom, code-free home pages. Learn applicable tasks for Mobile administrators to help you design a powerful and effective mobile app.

Skills you gain
- Adding complex interactive analysis to a Mobile app
- Configuring an app with code-free customizations
- Robust app navigation functionality
- Making personal design decisions for app creation
- Applying design principles for a polished app
- Understanding of app performance analysis tools

MicroStrategy products covered
- MicroStrategy Web
- MicroStrategy Mobile
- MicroStrategy Report Services

Right for you if
You are a document or dashboard designer or mobile app designer who wants to utilize advanced Mobile features.

Best class experience if you have
Dashboarding and Visualizations
Overview of Enterprise Mobility
Introduction to Documents
Advanced Documents

Topics
1. Create a robust app
   - Enhance your Mobile app with images
   - Design for multiple mobile devices: Multiple views
   - Further analyzing your data: Drilling
   - Provide additional information to users: Information windows
   - Add interactivity with Mobile widgets
   - Advanced app navigation
2. Enhance your app with a dossier and Transaction Services
   - Dossiers
   - Transaction Services
3. Code-free customizations
   - Customize your app without using code
   - Let users customize displayed data with prompts
   - Configure the home screen for a mobile device
   - Enable My Reports folder
4. Understand the impact of Mobile administration
   - User notifications, subscriptions, and alerts
   - Enterprise Mobility Management
   - Improve the user experience by understanding Mobile statistics
   - Prepare content for offline mode
   - Deploy a MicroStrategy Mobile app

Delivery method: LIVE INSTRUCTOR LED, eLEARNING, VIDEO RECORDING

REGISTER NOW
11.422 Database Write-back: Mobile Transactions (2 days)

Course description

Create mobile applications with write-back enabled functionality (transactions) for extended business value. Learn how to save and store business decisions and initiate transactions in your mobile apps. Build workflows with stored procedures, input-dependent text, and transactional SQL.

Skills you gain

• Creating freeform SQL queries
• XQuery coding to submit transactions through web services
• Creating transaction reports
• Creating data tables in a data warehouse that can have data written back to them
• Creating documents
• Configuring database write-back transactions
• Creating transaction-enabled mobile apps
• Configuring transactions for offline functionality

MicroStrategy products covered

• MicroStrategy Transaction Services
• MicroStrategy Mobile
• MicroStrategy Web
• MicroStrategy Report Services

Right for you if

You are an advanced mobile app designer creating apps that utilize write-back transactions.

Best class experience if you have

Overview of Enterprise Mobility
Project Architecting
A supported mobile device

Topics

1. Introduction to MicroStrategy Transaction Services
   • Building blocks of Transaction Services: Freeform SQL and Freeform XQuery
   • Transaction Services terminology
   • Use scenarios
2. Create query reports using Freeform SQL
   • Benefits and limitations of Freeform SQL reports
   • Creating a Freeform SQL report
3. Transaction Services reports
   • Create a Transaction Services report
4. Transaction Services documents
   • Create a Transaction Services-enabled document
   • Add transactions to a grid report
5. Interact with Transaction Services on mobile devices
   • Transaction tables
   • Mobile transaction controls
   • Photo Uploader widget
   • Image Viewer widget
   • Survey widget
   • Offline Mode
6. Create transaction reports with XQuery
   • Overview of Web services
   • About XQuery
   • Define a Freeform XQuery report
   • Create transactional documents
11.511 Advanced SDK for Customizing Visualizations (2 days)

Course description
Learn how to adapt D3 and other graphs so they are compatible with MicroStrategy and then integrate them into a dossier. Create a new visualization from scratch, or use a visualization from the Internet. Incorporate advanced features like metric thresholds, customized drop zones, and custom properties. Explore complex real-world visualizations to appropriately and easily implement these features, and deploy them to other environments. Provides advanced customization techniques, including coding.

Skills you gain
- Analyzing and writing code in JavaScript
- Modifying XML files, HTML, and CSS
- Using the Visualization SDK API
- Introductory D3 and SVG
- Creating a D3 visualization and a plug-in
- Converting a D3 visualization to consume MicroStrategy data
- Defining custom properties in a visualization

MicroStrategy products covered
- MicroStrategy SDK
- MicroStrategy Web
- MicroStrategy Desktop

Right for you if
You are an advanced SDK developer who wants to adapt visualizations and create new ones.

Best class experience if you have
- Overview of Enterprise Analytics
- SDK for Customizing Analytical Applications
- JavaScript experience

Topics
1. Introduction to visualizations
   - MicroStrategy SDK, Visualization SDK, and Visualization Builder
   - Data visualization
   - D3.js for visualizations
2. Convert D3 visualizations
   - Data-driven documents
   - Sources of D3.js visualizations
   - Map data to MicroStrategy constructs in code
3. Create D3 visualizations
   - Use a basic template
   - Scalar Vector Graphics (SVG) primer
   - Creating a visualization
4. Exploit advanced visualization features
   - Use a visualization as a selector
   - Change the number of metrics and attributes
   - Change an icon
   - Define drop zones
   - Define custom properties
   - Use metric thresholds
5. Create advanced D3 visualizations
6. Explore complex visualizations
   - Testing the visualization
   - Custom Bar chart visualization
   - Custom Line chart visualization
7. Deploy D3 visualizations
11.512 Advanced SDK for Customizing Branding (2 days)

Course description

Learn how to create your own URL for custom navigation using the URL API. Create a page, a series of pages, your own prompt type, and a custom object, among other customization skills you will gain in this class. Design custom logic such as workflows. Learn how to customize services to achieve organizational efficiency and communication goals. Use beans, tasks, and events to modify the core behavior of MicroStrategy Web.

Skills you gain

- Eclipse IDE and the Web Customization Editor
- Writing Java classes
- XML configuration files
- URL API and CSS
- Transforms, styles, new events, and add-ons
- Service-Oriented Architecture (SOA)
- Using tasks in plug-ins and create plug-ins

MicroStrategy products covered

- MicroStrategy SDK
- MicroStrategy Web

Right for you if

You are an advanced software developer who wants to fine-tune page and functionality customization.

Best class experience if you have

Overview of Enterprise Analytics
SDK for Customizing Analytical Applications
Java experience

Topics

1. MicroStrategy SDK overview
   - MicroStrategy SDK
   - MicroStrategy Web architecture
   - D3.js for visualizations
   - Visualization Builder
2. Report execution and URLs
   - MicroStrategy Web page
   - Navigation (URL API)
3. Rendering and presentation of data
   - Beans
   - Transforms
   - Styles
4. Customizing specific features
   - Events
   - Add-ons
5. Task infrastructure and Service-Oriented Architecture (SOA)
   - Creating a task
   - Using a task
### 11.513 Advanced SDK for Integration and Single Sign-on (2 days)

**Course description**
Explore single sign-on (SSO) and its challenges in the enterprise. Allow users to submit credentials to authenticate and access MicroStrategy Web without entering additional credentials. Learn different approaches to implementing these methods in your organization. Covers External Security Modules, external debugging tools, and third-party portals to integrate MicroStrategy Web using the SSO methodologies learned.

**Skills you gain**
- Authentication and single sign-on workflow
- Web session management
- Identity External Security interface
- External Security Module (ESM)
- Intermediate Java skills
- Token validation and trusted authentication
- Implementing user mapping with a database
- SQL Server database
- SQL Management Studio
- HTML, JavaScript, and external libraries
- Debugging methods with browser add-ons
- Implementing a basic Liferay application portal

**MicroStrategy products covered**
- MicroStrategy SDK
- MicroStrategy Web

**Right for you if**
You are an advanced SDK developer who wants to integrate MicroStrategy with other systems in your infrastructure.

**Best class experience if you have**
Overview of Enterprise Analytics
SDK for Customizing Analytical Applications
Java and HTML experience

**Topics**

1. Single sign-on: Concepts and workflow
   - Overview of Web SDK and SSO
   - Supported authentication providers
   - Authentication modes and workflows
   - Session creation and management
   - MicroStrategy user credentials
   - MicroStrategy SSO workflow
   - SSO implementation considerations

2. Customizing authentication
   - Creating and mapping a custom ESM
   - Using a custom ESM for customizing authentication workflow

3. Validating users
   - SSO with authentication and validation
   - Customizing trusted authentication

4. Debugging your application or plug-ins
   - Analyzing your web applications
   - Web traffic analyzers
   - Introducing Tamper Data

5. SSO Implementation using a third-party portal
   - Using external portals
   - Customizing SSO with an out-of-the-box MicroStrategy portlet
11.521 SDK for Customizing Android Applications (1 Day)

Course description
Develop a deep understanding of MicroStrategy Mobile SDK for Android devices. Learn to create custom mobile applications and mobilize existing business applications.

Skills you gain
- Understand the Android Studio development environment
- Plan customizations for MicroStrategy Mobile SDK
- Identify the components of the Mobile architecture and its design
- Rebrand a mobile app
- Install a custom font
- Create mobile configurations for different devices
- Deploy mobile configurations as a URL or embedded in the app

MicroStrategy products covered
- MicroStrategy Mobile
- MicroStrategy Web
- MicroStrategy SDK

Right for you if
You are interested in customizing the MicroStrategy Mobile app and adding functionality on both the client and server side.

Best class experience if you have
- Taken SDK for Customizing Analytical Applications and Overview of Enterprise Mobility courses
- Familiarity with Android OS, Android Studio IDE, and Gradle-based build system

Topics
1. Discovering and installing MicroStrategy Mobile SDK
   - What is MicroStrategy SDK?
   - Meet the family
   - Target scenarios behind the MicroStrategy SDK
   - MicroStrategy Mobile overview
   - Mobile SDK
   - What can I do? Levels of customization
2. Introduction to Android Studio
   - Android Studio overview
   - Walk-through: My first Android application
3. Mobile Architecture, Security and Configuration
   - MicroStrategy Mobile architecture
   - Types of authentication
   - Configure the Mobile Server
   - Methods to configure the mobile device
   - Embed the configuration in the app
   - Adding credentials to the configuration
4. Customize Mobile Configurations, Icons, and Splash Screen
   - Change the app ID and name
   - Generate and customize app icons
   - Modify copyright info and version number
   - Replace the splash screen icon with custom image
5. Build and Deploy Your App
   - Install the font plug-in
   - Use a custom font in a document
   - Deploy the app
**11.611 Analytics Performance Tuning (2 days)**

**Course description**

Learn how to tune the MicroStrategy Enterprise Analytics environment for high performance. Understand caching, Intelligent Cubes, system configuration, and other options available to optimize data transfer, data rendering, data warehouse access, and mobile performance.

**Skills you gain**

- Improving system performance using techniques such as caching and SQL optimization
- Creating high-performance documents for end users
- Implementing mobile performance improvement strategies
- Configuring high-performance networks using techniques such as HTTP compression

**MicroStrategy products covered**

- MicroStrategy administrative tools
- MicroStrategy Developer
- MicroStrategy Web
- MicroStrategy Mobile

**Right for you if**

You are an administrator who wants to optimize the performance of your MicroStrategy environment.

**Best class experience if you have**

Administration for Enterprise Analytics

**Topics**

1. Components of high performance
2. Caching
   - Optimizing system performance
   - Report and document caching
   - Object caching
   - Element caching
3. Intelligent Cubes
   - Intelligent Cubes overview
   - Incremental cube refresh
   - Report execution against cubes
4. System architecture and configuration
   - Server specifications
   - Intelligence Server configuration
   - Web server configuration
5. Data transfer
   - Introduction to network performance
   - Key network concepts
   - Network recommendations for high performance
   - Distribution Services performance
6. Data rendering
   - Report execution workflow
   - High performance documents
7. Data warehouse access
   - Database query performance
   - Report and schema design optimizations
   - SQL generation optimizations
   - Data architecture optimizations
   - Optimizing MultiSource reports
   - ODBC optimizations
8. Mobile performance
   - Document execution workflow in the Mobile environment
   - Mobile performance improvement strategies

**Delivery method:** [ ] LIVE INSTRUCTOR LED [ ] eLEARNING [ ] VIDEO RECORDING
11.612 Advanced Big Data Administration (1 day)

Course description
Learn how MicroStrategy masters the challenges of big data for organizations. Understand methods to maximize value and speed while ensuring veracity of data. Provides hands-on experience connecting to and configuring sample big data sources, understanding real-time processing, specific big data security challenges, and learn how to fine-tune performance.

Skills you gain
- Data retrieval from NoSQL sources
- Security in a big data environment
- Tuning Cloudera Impala
- Implementing real-time big data processing

MicroStrategy products covered
- MicroStrategy Developer

Right for you if
You are an administrator, project designer, data quality expert, or security specialist who wants to access big data sources, optimize their performance, and ensure adherence to security requirements.

Best class experience if you have
Introduction to Big Data

Topics
1. Overview of big data
   - Attributes of big data
   - Hadoop overview
2. Working with NoSQL sources
   - NoSQL and NoSQL sources
   - MicroStrategy-NoSQL database connectivity options
3. Real-time analytics
   - Streaming
   - Real-time processing architecture
   - Framework and industry adoption
   - Using MicroStrategy with Storm and Spark Streaming
4. Security in a big data environment
   - Security in Hadoop
   - Other security options
   - MicroStrategy’s security model
5. Performance optimization for big data access
   - Emerging technologies for addressing big data challenges
   - Generalized big data analytics workflow
   - Best practices for performance optimizations
11.621 Advanced Administration for Enterprise Mobility (1 day)

Course description
Optimize the Mobile server installation and deployment with advanced solutions for performance. Cluster your servers to improve performance, increase scalability, balance the load, and provide failover support for a mobile environment. You also get experience customizing apps, and enabling D3 visualizations, and push notifications in a mobile environment. Learn how to diagnose issues using mobile statistics.

Skills you gain
- Mobile server installation and configuration
- Mobile app deployment across different networks
- Clustering configuration in a mobile environment
- Mobile Server administration
- D3 visualization configuration in a mobile environment

MicroStrategy products covered
- MicroStrategy Mobile
- MicroStrategy Web
- MicroStrategy Developer

Right for you if
You are an administrator who wants advanced deployment and configuration solutions.

Best class experience if you have
Administration for Enterprise Analytics
Administration for Enterprise Mobility

Topics
1. Deploying MicroStrategy Mobile
   - MicroStrategy Mobile overview
   - Installation and configuration of the Mobile server
   - Deployment of the MicroStrategy Mobile app
   - Establishing connectivity to a Mobile server
2. Clustering in a mobile environment
   - Clustering overview
   - Benefits of clustering
   - Clustering in a MicroStrategy Mobile environment
   - Intelligence Server clustering
   - Mobile server-Intelligence Server clustering scenarios
   - Mobile configuration
   - Working with dissimilar hardware
3. MicroStrategy Mobile administration
   - MicroStrategy Mobile Administrator
   - Customizing MicroStrategy Mobile apps
   - Working with firewalls
   - D3 visualizations in Mobile
   - Diagnostics recommendations
11.910 Data Modeling (1 Day)

Course description
Learn the fundamentals of designing a data model. Understand business requirements and translate them into an adaptable, extensible, and sustainable data structure.

Skills you gain
- Learn how to analyze user requirements and translate them into a business model
- Create conceptual, logical, and physical models that support data-driven insights to solve business challenges
- Learn the basics of creating entity relationship data models
- Understand how to work with MySQL workbench

MicroStrategy products covered
- MicroStrategy Desktop
- MicroStrategy Web
- MicroStrategy Architect

Right for you if
You are interested in learning and applying the fundamentals of modeling your enterprise data assets.
You are an analyst who wants to expand your knowledge of data model.

Best class experience if you have
Have basic data analysis experience

Topics
1. Business intelligence fundamentals
   - Role of data models in a BI environment
   - Understand business requirements
   - Document analytical requirements from users
2. Basics of data modeling
   - The role of conceptual, logical, and physical data models within an organization’s data assets
   - Appropriate data granularity
3. Basics of Structured Query Language (SQL)
   - Introduction to SQL
   - Create a schema with SQL
   - Load and manipulate data in a schema
4. Analyze data in the model
   - Analyze data in the newly created schema
   - Derive business value from your model
11.911 MicroStrategy Engines & SQL (2 days)

Course description
Understand how the MicroStrategy Engine develops Structured Query Language (SQL) to gather data in a variety of reporting scenarios. Learn methods for tuning and optimizing report performance using Very Large Database (VLDB) properties.

Skills you gain
- SQL analysis
- SQL optimization techniques
- Creating complex queries with SQL, using subqueries and intermediate tables
- Understanding SQL behavior based on different objects on a report
- Managing the report execution process in a BI environment

MicroStrategy products covered
- MicroStrategy Developer

Right for you if
You are an advanced project designer or administrator who wants to optimize complex report and document designs for best performance.

Best class experience if you have
Advanced Analytics Reporting
Project Architecting

Topics
1. Introduction to MicroStrategy engine
   - SQL generation process
2. Basic optimizations
   - Multi-SELECT statements
   - Composing optimized SQL
   - Attribute definitions and their impact on joins
   - Intermediate tables
3. Templates
   - Attributes
   - Hierarchies
   - Consolidations
   - Custom groups
4. Metrics
   - Non-aggregatable metrics
   - Conditional metrics
   - Transformation metrics
5. Filters
   - Attribute qualifications
   - Set qualifications
   - Metric qualifications
6. Analytical Engine
   - Role of the Analytical Engine
   - Processing a report limit
   - Subtotals
   - Compound metrics
   - Analytical functions
7. Introduction to VLDB properties
   - VLDB properties defined
   - VLDB Properties Editor
11.912 Advanced Project Architecting (2 days)

Course description

Learn about advanced issues in data warehousing design and how to work with these complexities when implementing a MicroStrategy project. Understand how to model complex hierarchies and attribute relationships, implement role attributes and slowly changing dimensions, design the schema for optimal performance, use logical views to solve data modeling and schema design issues, and optimize query performance using both the database and MicroStrategy functionality.

Skills you gain

- Creating data models
- Modeling complex hierarchies
- Implementing role attributes and slow-changing dimensions
- Designing schemas for optimal performance
- Creating logical views
- Optimizing query performance using database and application functionality

MicroStrategy products covered

- MicroStrategy Developer
- MicroStrategy Architect

Right for you if

You are an administrator, project architect, or a database administrator who has an interest in learning how to resolve complex data warehouse modeling and design issues to best support a MicroStrategy reporting environment.

Best class experience if you have

Project Architecting

Topics

1. Introduction to Advanced Data Warehousing
   - Data Warehouse design and reporting
   - Overview of Advanced Data Warehousing
2. Advanced Schema Design
   - Snowflake and star schemas
   - Recommended schema design
3. Logical views
   - Logical views in MicroStrategy Architect
   - Creating logical views
   - Using logical views to resolve data warehousing issues
4. Many-to-Many relationships
5. Attribute roles
6. Hierarchies
   - Ragged hierarchies
   - Split hierarchies
   - Recursive hierarchies
7. Slowly Changing Dimensions (SCDs)
   - Creating a life stamp
   - Using a hidden attribute
CATALOG SUMMARY
## CATALOG SUMMARY

### COURSES FOR ANALYSTS

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For more information please contact your Account Executive about Enterprise training for your organization or email education@microstrategy.com and/or call 1-877-232-7168.