

Getting Started with Visual Analytics Administration and Deployment

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SAS[®] VISUAL ANALYTICS

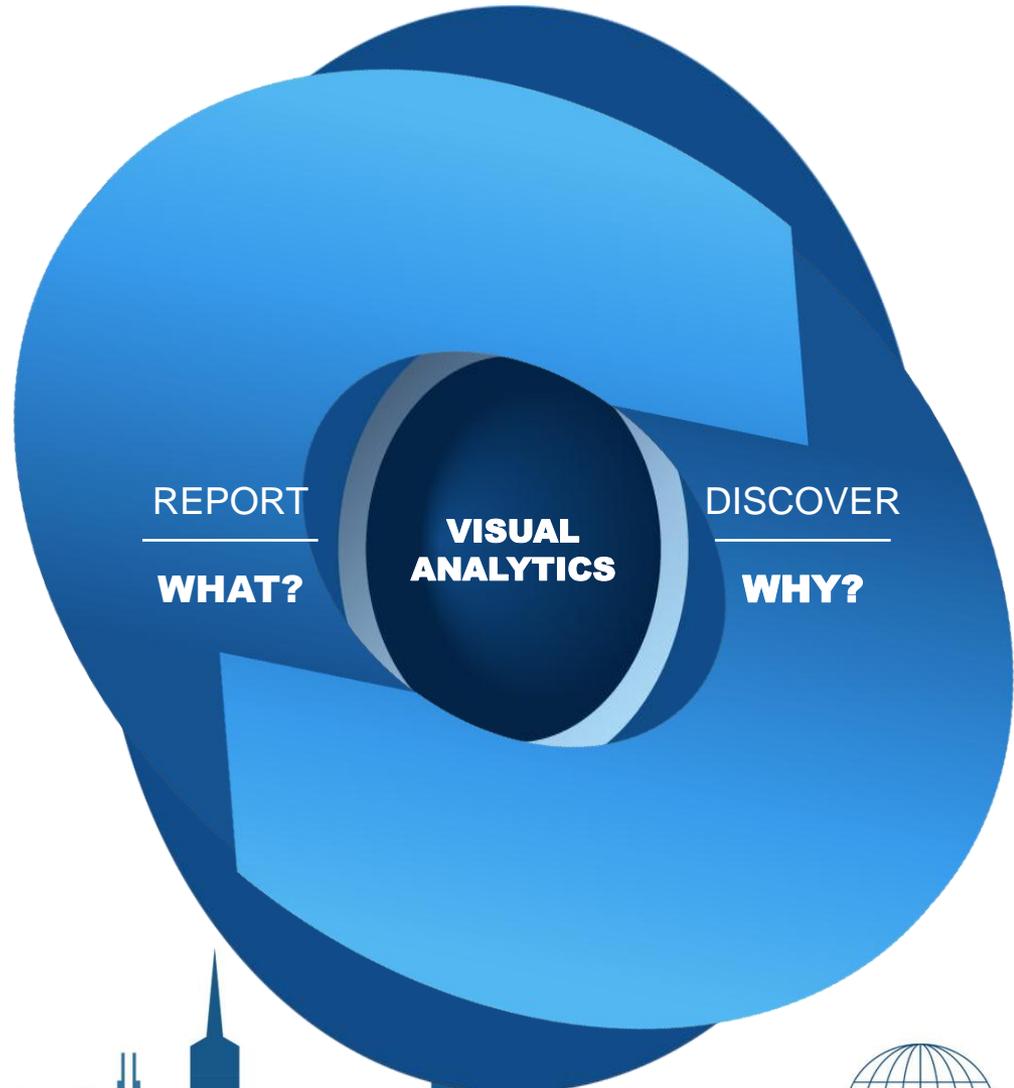
A SINGLE SOLUTION

EXPLORE

DISCOVER

DESIGN

DELIVER



DELIVERS A SINGLE SOLUTION FOR FASTER, SMARTER DECISIONS

Central Entry Point

Integration

Role-Based Views



PREPARE

- Manage data
- Load and join data
- Create calculated columns



EXPLORE

- Perform ad-hoc data exploration
- Insights generated through analytic visualizations



DESIGN

- Create dashboard style reports for web or mobile



DELIVER

- SAS® Mobile BI - native tablet applications delivering interactive reports
- Web and PDF

IN-MEMORY ANALYTICS ENGINE

Why SAS® Visual Analytics?

FOR BUSINESS

- Easy-to-use analytics create a starting point for building and analytics driven culture
- Visual exploration of data, combined with analytics, fuel insight discovery for competitive advantage
- Rapid delivery of insights to colleagues via the Web and mobile promote collaboration and fact based decisions

FOR IT

- Control governance and empower colleagues with easy access to all data
- Leverage a highly scalable environment for cost effective growth when the business needs it



BASIC ADMINISTRATION

- **Understand LASR data serving**
- Understanding hardware
- Load and manage data
- Manage security access
- Monitor system
- Control mobile access



LASR SERVER – HOW IT WORKS

- Big data is processed fast because it is stored in memory
- Big data can be loaded quickly if stored in parallel, distributed storage
 - Hadoop HDFS, Teradata, Greenplum, others
- It can also be loaded from other data sources you have
- We load data into server sessions that hold data and perform analytics
- Server sessions can be limited in total size if needed
- [Visual Analytics Administrator](#)
 - LASR processes running
 - Tables available in each process



MANAGING LASR SERVER INSTANCES

The screenshot displays the SAS Visual Analytics Administrator interface. The browser address bar shows the URL: `http://rdcesx07144.race.sas.com:7980/SASVisualAnalyticsAdministrator/SAS_AdminClient/Manage Environment - SAS...`. The page title is "Manage Environment".

The interface includes a navigation menu with options: "File", "View", "Tools", "Help", "LASR Tables", "HDFS", "Resource Monitor", "Process Monitor", "Mobile Devices", and "Log Off".

On the left, there is a "Folders" pane showing a tree structure of SAS folders, including "My Folder", "BILineage", "custom_VAT", "OneBI", "Products", "SAS Projects", "Shared Data", "System", and "User Folders".

The main content area shows a "Tables by Server Component" table. Above the table, there is a "Show tables only" checkbox and a "Get Status" button. A progress bar indicates "Used LASR memory: 23%" out of "2.95 TB".

Tables by Server Component	Status	Host	Port	Started By	LASR Name	Description
Connection: VAA: LASR vafit01 - 16772	●	vafit01.unx.sas...	16772	dozeri		
VAA: LASR vafit01 - 16772					HPS	
Spreadsheet10kdsa...	●				HPS.Spreadsh...	
Spreadsheet10kabc	■				HPS.Spreadsh...	
Spreadsheet10kaaa	■				HPS.Spreadsh...	
Spreadsheet10k_null	■				HPS.Spreadsh...	
OutputTablehh	■				HPS.OutputTab..	
OutputTable	●				HPS.OutputTable	
OutputewrewrewTable	●				HPS.Outputewr..	
movies112213	■				HPS.movies11...	
movies	●				HPS.movies	
CLASS_PreFilter	■				HPS.CLASS_Pr..	
VAA: LASR vafit01 - 16644						VAA LASR Ser...

At the bottom of the window, the status bar shows "Connected: rdcesx07144.race.sas.com:8561" on the left and "GJM as Mehler, Gary J." on the right.

KNOWING WHAT DATA IS BEING SERVED UP

The screenshot displays the SAS Visual Analytics Administrator interface. The browser address bar shows the URL: `http://rdcesx07144.race.sas.com:7980/SASVisualAnalyticsAdministrator/SAS_AdminClie`. The interface includes a navigation menu with options like File, Edit, View, Favorites, Tools, and Help. The main content area is titled "Manage Environment" and contains several tabs: LASR Tables, Mobile Devices, Resource Monitor, Process Monitor, and Mobile Devices. A "Log Off" button is visible in the top right corner.

The "Process Monitor" tab is active, showing a selection of processes. The selected process is "jaalle: lasr 10925-LASR Analytic Server on: vafit01 port: 7320", which is using 23% of the available resources. A "Show process details" link is provided below the selection.

The "Memory" section displays a table of active tables:

Tables	Owner	Rows	Variables
HPS.CARETAIL_SALES..	jaalle	279215483	30
HPS.MC1DATASET2	jaalle	158530955	14
HPS.MEGACORP5M	jaalle	70732833	46
HPS.COMBINED_50MILL	jaalle	50000000	89
HPS.DEFECTS_SPARS..	jaalle	20067250	6
HPS.STARJOIN_BID_S...	jaalle	16912550	7

The "CPU and Memory" section features a bar chart showing resource usage across different instance IDs. The Y-axis represents "CPU (%) and M..." (Memory) ranging from 0 to 25. The X-axis is labeled "Instance ID". The chart shows several peaks in resource usage, with the highest peak reaching approximately 25%.

At the bottom of the interface, it indicates "05/01/13 01:18:10 PM - 98 instances sampled". The status bar at the bottom left shows "Connected: rdcesx07144.race.sas.com:8561" and the bottom right shows "GJM as Mehler, Gary J.".

SEEING WHAT IS IN DISTRIBUTED STORAGE

The screenshot displays the SAS Visual Analytics Administrator web interface. The browser address bar shows the URL: `http://rdcesx07144.race.sas.com:7980/SASVisualAnalyticsAdministrator/SAS_AdminClie`. The page title is "Manage Environment - SAS...". The navigation menu includes "Home", "Manage Environment", "File", "View", "Tools", "Help", "LASR Tables", "HDFS", "Resource Monitor", "Process Monitor", "Mobile Devices", and "Log Off".

The "Folders" sidebar on the left shows a tree structure under "SAS Folders":

- My Folder
- BILineage
- custom_VAT
- OneBI
- Products
- SAS Projects
- Shared Data
- System
- User Folders

The main content area shows a file browser view for the root directory. The file list is as follows:

Name	Size	Date Modified
cxatest	449.55 GB	11/06/12 11:37:3...
hps	344.91 GB	03/23/13 06:56:1...
LEV1	288.80 GB	02/18/13 09:15:0...
brian	213.16 GB	11/01/12 11:55:3...
lev1	146.16 GB	12/20/12 10:14:4...
visst...	108.52 GB	11/29/12 11:09:1...
users	93.49 GB	10/17/12 04:35:2...
vase	81.57 GB	02/06/13 01:49:0...
combined_50...	41.82 GB	12/01/12 01:52:2...
windpower.sa...	27.53 GB	11/01/12 12:54:5...
mc1 dataset2....	23.70 GB	10/17/12 04:54:3...
text32k150kob...	22.60 GB	10/17/12 05:14:2...
megacorp6s.s...	21.32 GB	01/03/13 08:29:2...
comtrade2012..	21.13 GB	02/26/13 03:23:4...

Properties for the selected file are shown on the right:

Property	Value
Path	/
Description	N/A
Copies	0
Block Size	N/A
Number of Variables	0
Owner	N/A
Group	N/A
Permissions	N/A
SASHDAT file?	No

At the bottom left, the connection status is "Connected: rdcesx07144.race.sas.com:8561". At the bottom right, the user is identified as "GJM as Mehler, Gary J.".

BASIC ADMINISTRATION

- Understand LASR data serving
- **Understanding hardware**
- Load and manage data
- Manage security access
- Monitor system
- Control mobile access

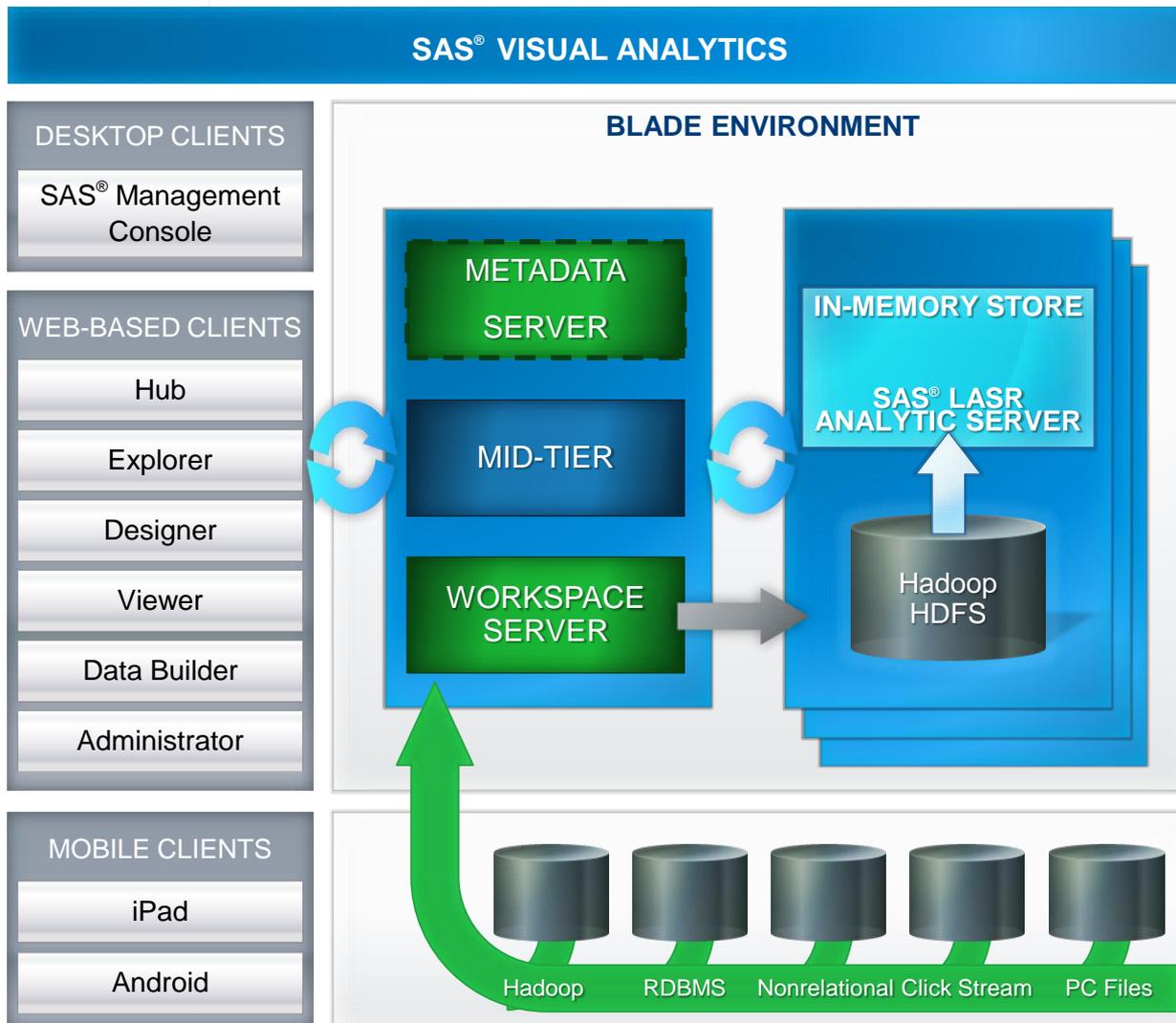


UNDERSTANDING HARDWARE

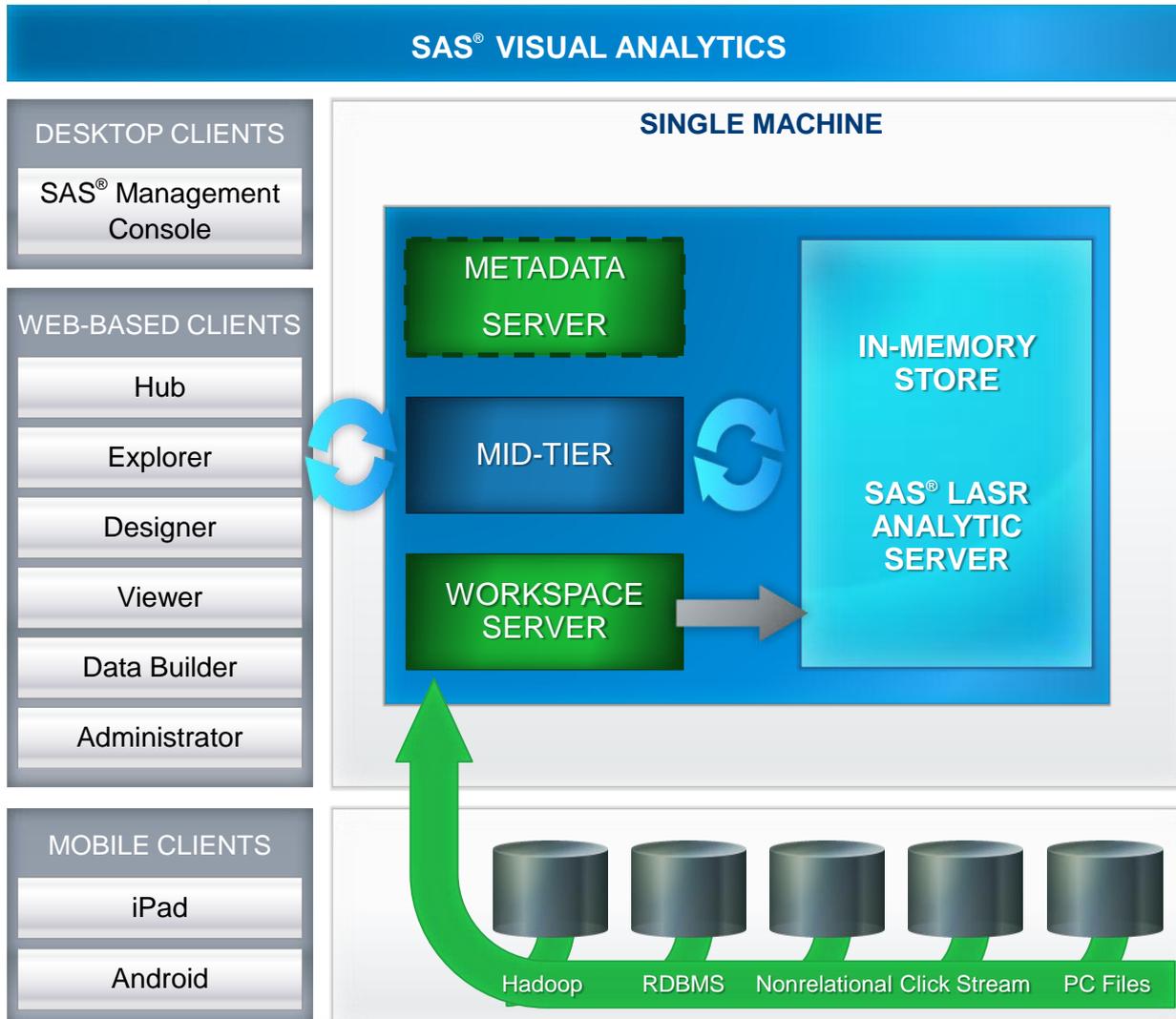
- LASR Server can run in two modes
 - MPP – across a collection of systems
 - » Data and processing of that data is distributed across all systems
 - » Operates on Linux systems
 - SMP – single system with plentiful memory and CPU cores
 - » Data and processing occurs on a single system
 - » Operates on a Linux system
 - » Coming in Summer: can operate on a Windows-based server
- Visual Analytics Administrator shows resource use across hardware



DISTRIBUTED DEPLOYMENT *(FOR COMMODITY HARDWARE)*



NON-DISTRIBUTED DEPLOYMENT (FOR COMMODITY HARDWARE)



INTRODUCTION TO SAS VISUAL ANALYTICS

Visual Analytics 6.1 comes in 2 versions

- **Distributed**

- **Multiple Machines**
- **SAS High Performance Analytics Environment**
- **Co-located Data Provider**

- **Non-Distributed**

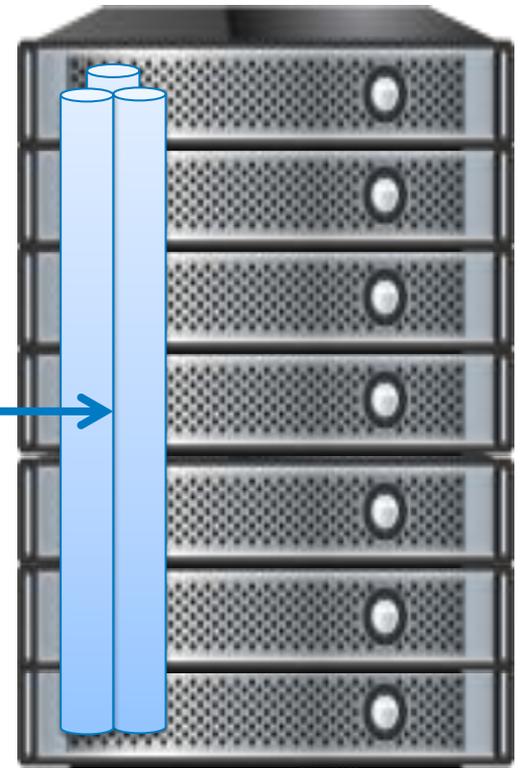
- **Single machine**
- **No SAS High-Performance Analytics Environment**
- **No co-located data provider**



SAS VISUAL ANALYTICS

The Distributed version of SAS VA 6.1 comes with one of 3 co-located data Providers

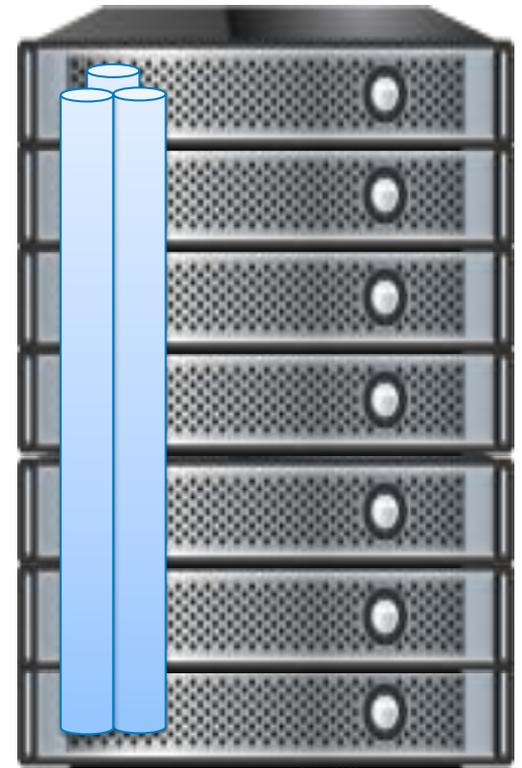
- Distributed
 - Multiple Machines
 - SAS High Performance Analytics Environment
 - **Co-located Data Provider**



SAS VISUAL ANALYTICS

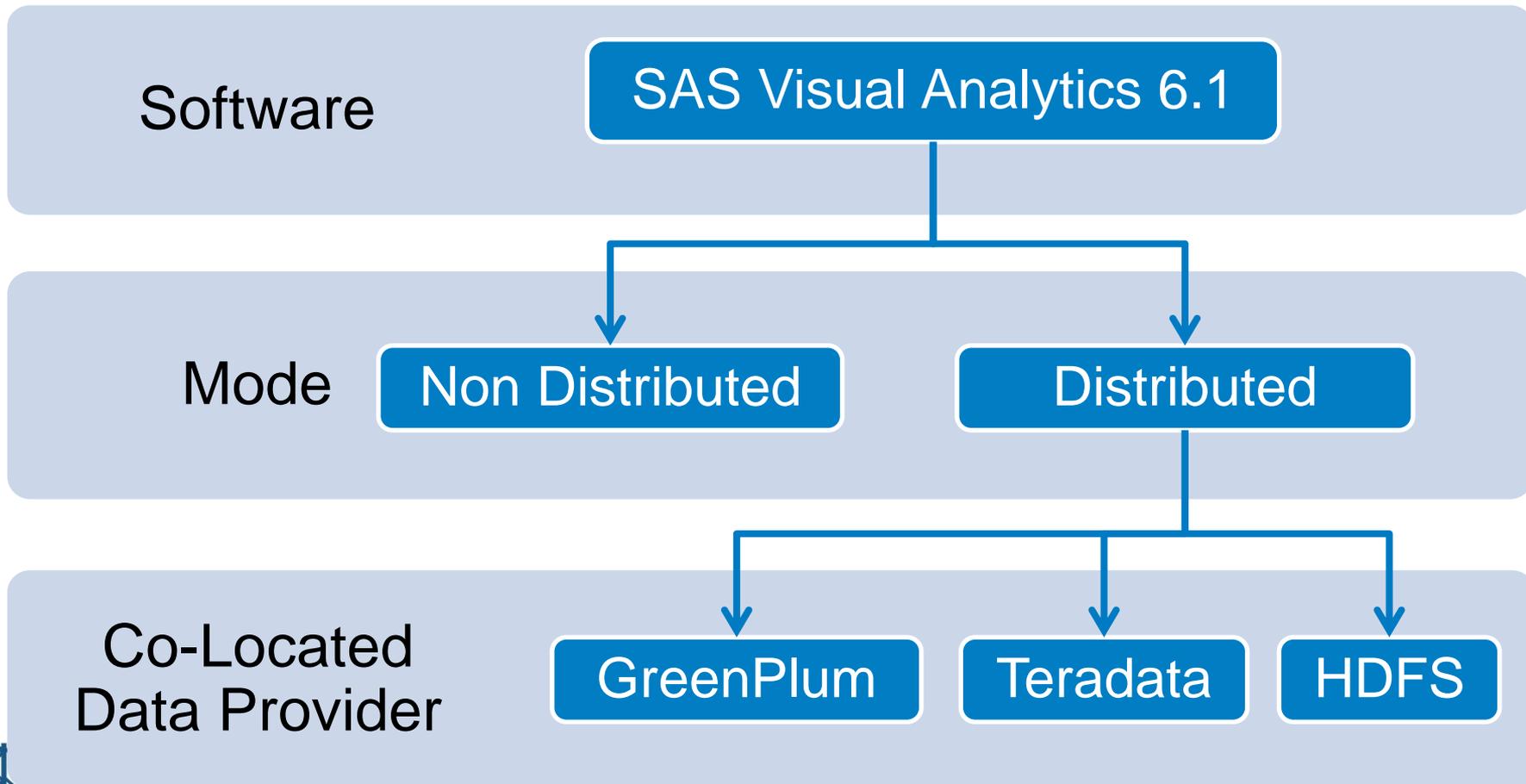
The Distributed version of SAS VA 6.1 comes with one of 3 co-located data Providers

- The 3 choices of Co-Located Data providers are
 - Teradata
 - GreenPlum
 - Hadoop Distributed File System (aka HDFS)

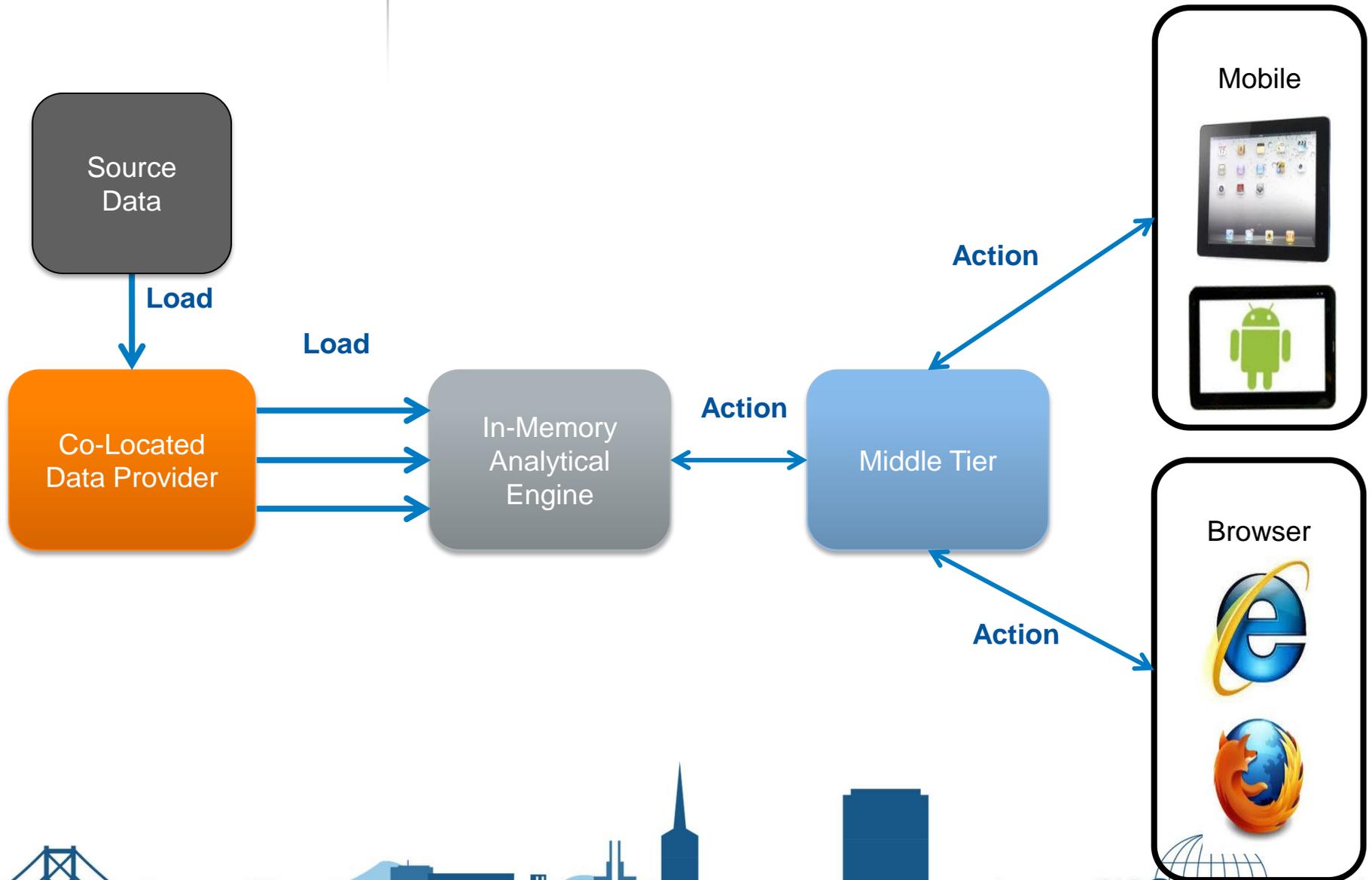


SAS VISUAL ANALYTICS

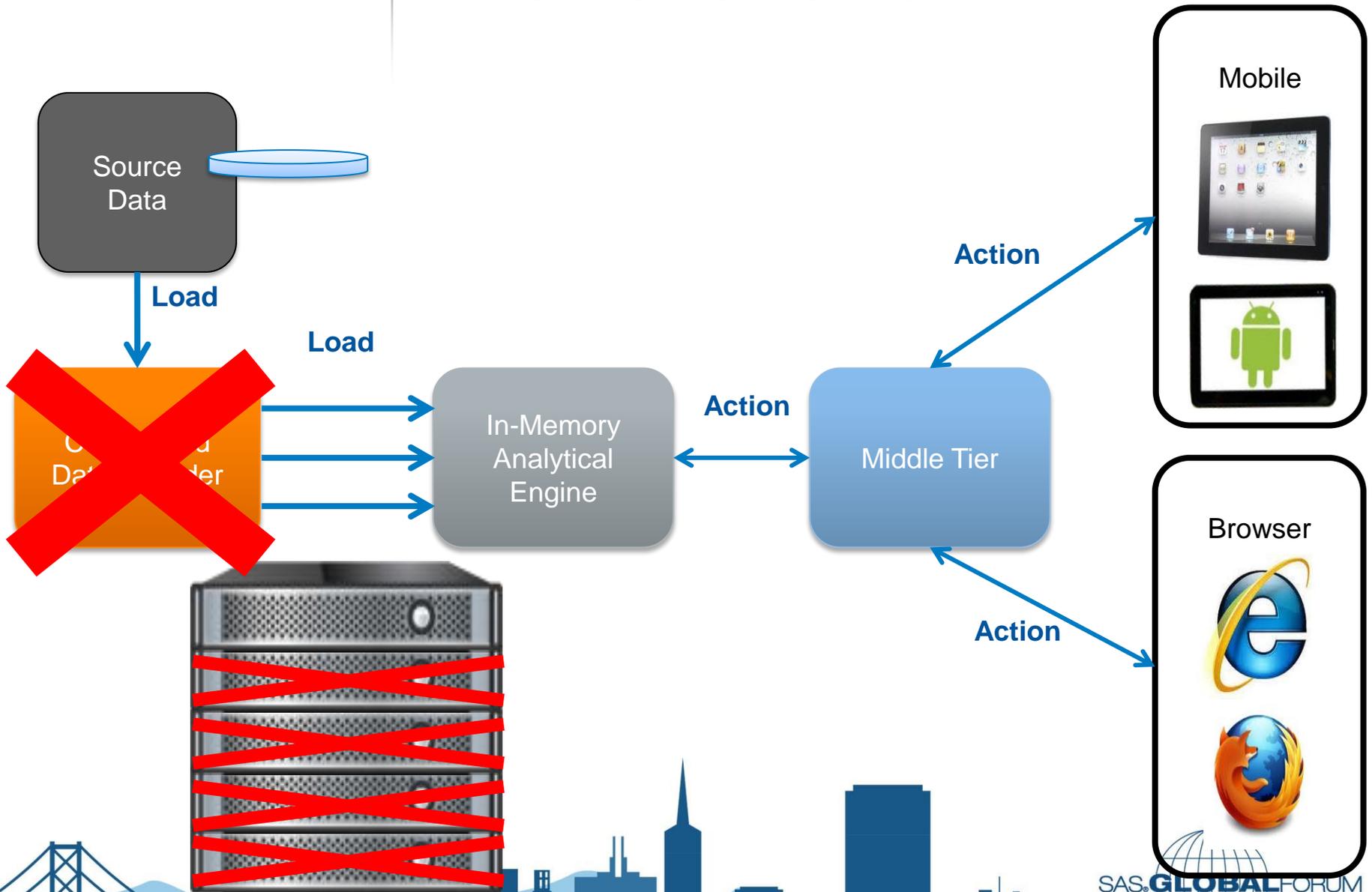
- To put it another way:



HIGH LEVEL VIEW



DATA LOADING – NON-DISTRIBUTED



PACKAGING REALITIES

- VA is not an appliance

- The customer has to buy the hardware
- It still does not come in a “ready to go” state.
- You still need someone to install/configure

Up to S^WW Help Contact us

Preconfigured, preloaded hardware and software packaging options with pricing bundles?

Selling with Hardware Partners

A successful SAS Visual Analytics implementation depends on the hardware. To that end, SAS offers to customers three different hardware categories which your customers can select from.

Benchmarked Hardware Partners	Dedicated Database Appliance Hardware Partners	Alternative Equivalent Hardware Environment
<i>Preconfigured, preloaded hardware and software packaging options with pricing bundles?</i> <ul style="list-style-type: none">■ Dell■ HP	<i>Tested and Supported Dedicated Database Appliances</i> <ul style="list-style-type: none">■ EMC Greenplum■ Teradata	<i>If customers have other hardware choices, alternative options exist but are not pre-tested?</i> <ul style="list-style-type: none">■ IBM■ All others

If you have questions about which of the 3 hardware options might make most sense for your customer, please contact your SAS Visual Analytics spearhead.

Business Analytics
Business Intelligence
Customer Intelligence
Foundation
Fraud & Security Intelligence
Governance, Risk & Compliance
High-Performance Analytics
Information Management
IT Intelligence
OnDemand Solutions
Performance Management
Risk Management
Supply Chain Intelligence
Sustainability Management
SAS 9.3 Resource Center
Pricing Index A-Z
Product Index A-Z
Quick Find Portal

DEFINITIONS – BLADES



C7000 Chassis
Holds BL460 Blades

- Blades are very small



BL460



DEFINITIONS - CHASSIS



- A chassis contains
 - A number of blades
 - Power Supply for the blades
 - Cooling
 - Networking Interfaces
 - Storage Interfaces

Multiple Chassis can be connected together.

- Animation



STORAGE

- Applicable to Commodity Hardware
- Teradata and Greenplum have their own pre-defined storage
- VA does not require very fast storage
 - No need for FusionIO/SSD on worker nodes
- VA does not require Shared (clustered) Storage
- Recommended local storage configuration
 - Mirrored drives on SAS Node
 - Mirrored drives on Root Node and Name Node
 - Other Nodes do not need mirroring, but that may make them fragile
 - » A disk failure will take out a node



5.1 Order

SAS COMSAT: VA MPP – DISTRIBUTED MODE

Order 09C7ZS (Test, Internal)

Order Actions

- Send SOE
- Mark Complete
- Cancel
- Release
- Reprocess
- View SIDs
- View TLetter
- View SOI
- Link Here
- View Logs
- View Directory
- FSSET Data

Summary Products ESD Downloads Distribution Processing History

Search Products

Product/Bundle	Expiration
Base SAS	21Feb2013
SAS LASR Analytic Server Distributed Mode	07Dec2012
SAS High-Performance Server	
SAS LASR Analytic Server	
SAS Threaded Kernel Extensions for Advanced Analytics	
SAS Threaded Kernel Extensions for High-Performance Analytics	
SAS Threaded Kernel Extensions for LASR Analytic Server	
SAS Threaded Kernel Message Passing Interface	
SAS Threaded Kernel Extension for SSH Remote Process Launching	
SAS High-Performance Management Console	
SAS High-Performance Deployment for Hadoop	
SAS High-Performance Node Installation	
SAS Visual Analytics	21Feb2013

5.1 Order

SAS COMSAT: VA MPP – DISTRIBUTED MODE

Order 09C7ZS (Test, Internal)

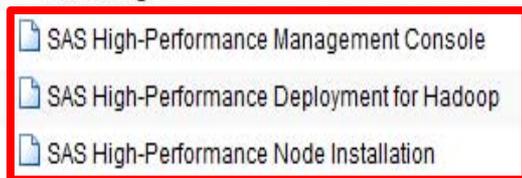
Order Actions

- Send SOE
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- View SOI
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- View Directory
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Summary Products ESD Downloads Distribution Processing History

Search Products Reset  

Product/Bundle	Expiration
Base SAS	21Feb2013
SAS LASR Analytic Server Distributed Mode	07Dec2012
SAS High-Performance Server	
SAS LASR Analytic Server	
SAS Threaded Kernel Extensions for Advanced Analytics	
SAS Threaded Kernel Extensions for High-Performance Analytics	
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SAS Threaded Kernel Extension for SSH Remote Process Launching	
SAS High-Performance Management Console	
SAS High-Performance Deployment for Hadoop	
SAS High-Performance Node Installation	
SAS Visual Analytics	21Feb2013



5.1 Order

SAS ORDER INFORMATION: VA MPP – DISTRIBUTED MODE

Your Order Information:

Order Number: 09C7ZS
SAS Installation Key: SJSL-96H5-7ST3
Deployment Type: Planned (Deployment plan needed)
Date: December 03, 2012
Space Required for SAS Software Depot: 11.7GB
Software Status: Pre-production

SAS Installation Representative

Temporary SAS User

E-mail Address

Tech Support Site Number

70068118

Information for Tech Support Site 70068118:

Site Name: Pre-Prod LAX VA 6.1 Distributed
Tech Support Site Number: 70068118
Contracts Site Number: 545535
Operating System: Linux® for X64
Product: SAS 9.3 64-bits TS1M2, Rev. 930_12w50

Product(s) Ordered

Base SAS

SAS LASR Analytic Server Distributed Mode

SAS Visual Analytics

5.1 Order

SAS COMSAT: VA SMP – NON-DISTRIBUTED MODE

Order 09C7ZT (Test, Internal)

Order Actions

- Send SOE
- Mark Complete**
- Cancel
- Release
- Reprocess
- View SIDs
- View TLetter
- View SOI
- Link Here
- View Logs
- View Directory
- FSSET Data

Summary Products ESD Downloads Distribution Processing History

Search Products Reset  

Product/Bundle	Expiration
Base SAS	21Feb2013
▼ SAS LASR Analytic Server Non-Distributed Mode	07Dec2012
SAS High-Performance Server	
SAS LASR Analytic Server	
SAS Threaded Kernel Extensions for Advanced Analytics	
SAS Threaded Kernel Extensions for High-Performance Analytics	
SAS Threaded Kernel Extensions for LASR Analytic Server	
SAS Threaded Kernel Message Passing Interface	
SAS Threaded Kernel Extension for SSH Remote Process Launching	
SAS LASR Analytic Server SMP Components	
▶ SAS Visual Analytics	21Feb2013

5.1 Order

SAS COMSAT: VA SMP – NON-DISTRIBUTED MODE

Order 09C7ZT (Test, Internal)

Order Actions

- Send SOE
- Mark Complete**
- Cancel
- Release
- Reprocess
- View SIDs
- View TLetter
- View SOI**
- Link Here
- View Logs
- View Directory
- FSSET Data

Summary | **Products** | **ESD Downloads** | **Distribution** | **Processing History**

Search Products **Reset**  

Product/Bundle	Expiration
Base SAS	21Feb2013
▼ SAS LASR Analytic Server Non-Distributed Mode	07Dec2012
SAS High-Performance Server	
SAS LASR Analytic Server	
SAS Threaded Kernel Extensions for Advanced Analytics	
SAS Threaded Kernel Extensions for High-Performance Analytics	
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SAS Threaded Kernel Message Passing Interface	
SAS Threaded Kernel Extension for SSH Remote Process Launching	
SAS LASR Analytic Server SMP Components	
▶ SAS Visual Analytics	21Feb2013



5.1 Order

SAS ORDER INFORMATION: VA SMP – NON-DISTRIBUTED MODE

Your Order Information:

Order Number: 09C7ZT
SAS Installation Key: WFHP-1278-Y9LD
Deployment Type: Planned (Deployment plan needed)
Date: December 03, 2012
Space Required for SAS Software Depot: 11.4GB
Software Status: Pre-production

<u>SAS Installation Representative</u>	<u>E-mail Address</u>	<u>Tech Support Site Number</u>
Temporary SAS User		70068118

Information for Tech Support Site 70068118:

Site Name: Pre-Prod LAX VA 6.1 SMP
Tech Support Site Number: 70068118
Contracts Site Number: 545535
Operating System: Linux® for X64
Product: SAS 9.3 64-bits TS1M2, Rev. 930_12w50

Product(s) Ordered

Base SAS
SAS LASR Analytic Server Non-Distributed Mode
SAS Visual Analytics

BASIC ADMINISTRATION

- Understand LASR data serving
- Understanding hardware
- **Load and manage data**
- Manage security access
- Monitor system
- Control mobile access



ACCESSING DATA

- Access new information
 - Excel spreadsheets
 - CSV-exported data
 - SAS datasets on a desktop
- Access existing information
 - SAS data on a network
 - Other data in databases
 - Data available from SAS Information Maps
- [Visual Data Builder](#)



IMPORTING LOCAL SPREADSHEETS, CSV FILES, ETC

The screenshot shows the SAS Visual Data Builder interface. The browser address bar displays the URL: `http://rdcesx07144.race.sas.com:7980/SASVisualDataBuilder/VisualDataBuilder_swf/v`. The application title is "SAS Visual Data Builder".

The main window has a menu bar with "File", "Edit", "View", "Favorites", "Tools", and "Help". Below the menu bar is a navigation area with "Home" and "<Recent Content>". The SAS logo and "Log Off" link are in the top right corner.

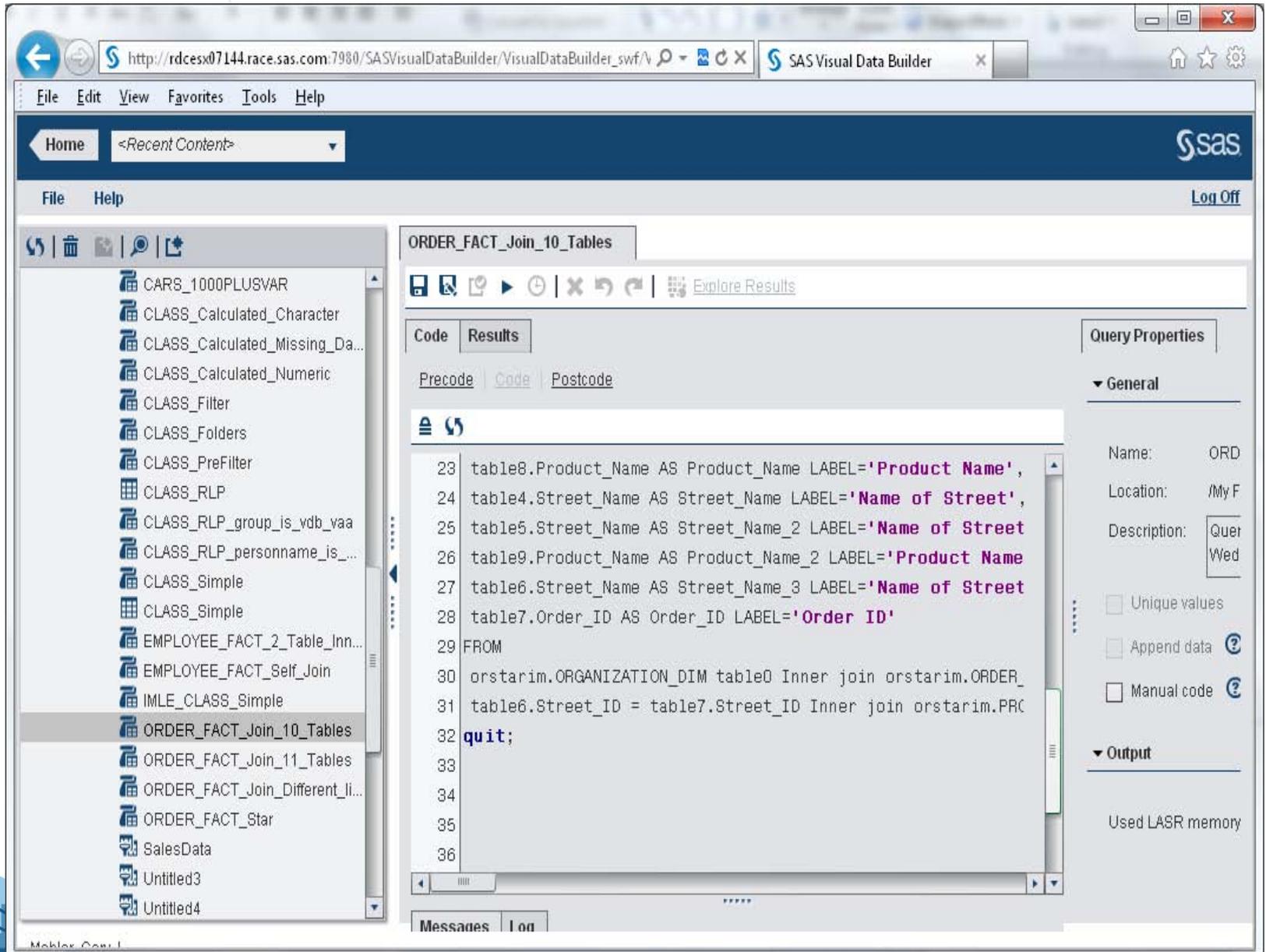
The left sidebar shows a file tree with folders: "My Folder", "BILineage", "custom_VAT", "OneBI", "Products", "SAS Projects", "Shared Data", "System", and "User Folders".

The central area displays the "Import Local Data" dialog box. It includes the following fields and options:

- Used LASR memory: 23% (with a green progress bar) / 2.95 TB
- Source File: _____
- Name: Spreadsheet10k.xlsx
- Select worksheet:
 - All
 - Sheet1
 - Append worksheets together
- Use data in the first row as SAS variable names
- Trim spaces
- Data records begin on row: 2 (with up/down arrows)
- Advanced options (collapsed)

Buttons at the bottom: "Preview", "OK", and "Close".

IMPORTING SAS INFORMATION MAPS



The screenshot displays the SAS Visual Data Builder web interface. The browser address bar shows the URL: `http://rdcesx07144.race.sas.com:7980/SASVisualDataBuilder/VisualDataBuilder_swf/v`. The interface includes a menu bar with 'File', 'Edit', 'View', 'Favorites', 'Tools', and 'Help'. Below the menu bar, there is a navigation area with 'Home' and '<Recent Content>' options. The main workspace is divided into three sections:

- File Explorer (Left):** A list of files and folders, including 'CARS_1000PLUSVAR', 'CLASS_Calculated_Character', 'CLASS_Calculated_Missing_Da...', 'CLASS_Calculated_Numeric', 'CLASS_Filter', 'CLASS_Folders', 'CLASS_PreFilter', 'CLASS_RLP', 'CLASS_RLP_group_is_vdb_yaa', 'CLASS_RLP_personname_is...', 'CLASS_Simple', 'EMPLOYEE_FACT_2_Table_Inn...', 'EMPLOYEE_FACT_Self_Join', 'IMLE_CLASS_Simple', 'ORDER_FACT_Join_10_Tables' (highlighted), 'ORDER_FACT_Join_11_Tables', 'ORDER_FACT_Join_Different_li...', 'ORDER_FACT_Star', 'SalesData', 'Untitled3', and 'Untitled4'.
- Code Editor (Center):** A window titled 'ORDER_FACT_Join_10_Tables' containing a SQL query. The query is as follows:

```
23 table8.Product_Name AS Product_Name LABEL='Product Name',
24 table4.Street_Name AS Street_Name LABEL='Name of Street',
25 table5.Street_Name AS Street_Name_2 LABEL='Name of Street
26 table9.Product_Name AS Product_Name_2 LABEL='Product Name
27 table6.Street_Name AS Street_Name_3 LABEL='Name of Street
28 table7.Order_ID AS Order_ID LABEL='Order ID'
29 FROM
30 orstarim.ORGANIZATION_DIM table0 Inner join orstarim.ORDER_
31 table6.Street_ID = table7.Street_ID Inner join orstarim.PRC
32 quit;
```
- Query Properties (Right):** A panel titled 'Query Properties' with a 'General' section. It shows the following details:
 - Name: ORD
 - Location: /My F
 - Description: Quer Wed
 - Unique values:
 - Append data: ?
 - Manual code: ?The 'Output' section shows 'Used LASR memory'.

JOINING DATA PRIOR TO LOADING INTO LASR MEMORY

The screenshot displays the SAS Visual Data Builder interface. The browser address bar shows the URL: http://rdcesx07144.race.sas.com:7980/SASVisualDataBuilder/VisualDataBuilder_swf/v. The application title is "SAS Visual Data Builder". The interface includes a menu bar (File, Edit, View, Favorites, Tools, Help) and a toolbar. The main workspace shows a data model with three tables: CUSTOMER_DIM, ORDER_FACT, and PRODUCT_DIM. The tables are connected by lines, indicating relationships. The CUSTOMER_DIM table is on the left, ORDER_FACT is in the center, and PRODUCT_DIM is on the right. The ORDER_FACT table is connected to both CUSTOMER_DIM and PRODUCT_DIM. The CUSTOMER_DIM table has fields: Customer_ID, Customer_Country, Customer_Gender, Customer_Name, Customer_FirstName, Customer_LastName, Customer_BirthDate, and Customer_Age_Group. The ORDER_FACT table has fields: Customer_ID, Employee_ID, Street_ID, Order_Date, Delivery_Date, Order_ID, Order_Type, and Product_ID. The PRODUCT_DIM table has fields: Product_ID, Product_Line, Product_Category, Product_Group, Product_Name, Supplier_Country, Supplier_Name, and Supplier_ID. The SAS Visual Data Builder interface includes a menu bar (File, Edit, View, Favorites, Tools, Help), a toolbar, and a list of data sources on the left. The current view is "Design".

SCHEDULING RECURRING TASKS TO KEEP DATA CURRENT

The screenshot shows the 'New Time Event' dialog box in SAS Visual Data Builder. The dialog is titled 'New Time Event' and has a close button (X) in the top right corner. It is overlaid on a browser window showing the SAS Visual Data Builder interface.

Frequency Selection:

- One time only (Date: 05/01/2013, Hour: 0, Minute: 0)
- More than once
 - Hourly
 - Daily
 - Interval in days: 1
 - Every weekday
 - Weekly
 - Monthly
 - Yearly

Time Selection:

Hours:	Minutes:	Selected start times:
<input type="checkbox"/> 01:00 PM	<input type="checkbox"/> 0-9	17:33
<input type="checkbox"/> 02:00 PM	<input type="checkbox"/> 10-19	
<input type="checkbox"/> 03:00 PM	<input type="checkbox"/> 20-29	
<input type="checkbox"/> 04:00 PM	<input checked="" type="checkbox"/> 30-39	
<input checked="" type="checkbox"/> 05:00 PM	<input type="checkbox"/> 40-49	
<input type="checkbox"/> 06:00 PM	<input type="checkbox"/> 50-59	
<input type="checkbox"/> 07:00 PM		

Duration in minutes: 1

Range of Recurrence:

Starting date: 05/01/2013 Ending date: No end date [Date]

At the bottom right of the dialog are 'OK' and 'Cancel' buttons. The background shows a list of data sources on the left and a task list on the right.

MANIPULATING DATA

- Perform basic joins on data before it is loaded
- Can load directly into LASR or into other SAS library types
- If loading into LASR, can stage data in distributed storage as a pre-step
- Can schedule to re-run on-demand to keep data fresh



BASIC ADMINISTRATION

- Understand LASR data serving
- Understanding hardware
- Load and manage data
- **Manage security access**
- Monitor system
- Control mobile access



MANAGE SECURITY ACCESS

- Identities and access managed through SAS Metadata Server
- New table definitions can be added and kept current
 - Like Register Tables and Update Table Metadata in SAS Management Console
- Folder-level, table-level, and row-level permission can be granted
- LASR Server sessions can be managed and maintained
- Roles and capability enabled



ROLES AND CAPABILITIES CAN LIMIT FUNCTIONAL ACCESS

The screenshot displays the SAS Visual Analytics web interface. At the top, the browser address bar shows the URL: `http://rdcesx07144.race.sas.com:7960/SASVisualAnalyticsHub/Flash/VisualAnalyticsHub.jsp#`. The page title is "Visual Analytics".

The main navigation bar includes the "Home" label, the SAS logo, and a search bar with the text "Search content". A "Log Off" button is also present.

The interface is divided into several sections:

- Create Content:** A section with three large icons: "Create Report" (a bar chart), "Explore Data" (a grid of data points), and "Prepare Data" (a lightning bolt).
- My Content:** A section titled "My Content" with a "Manage..." link. It includes sub-sections for "Recent", "Favorites", and "Browse...". Below these are eight report thumbnails with labels: "Report 1", "Untitled2", "PopulationCurves2", "Joint2EnviroData", "Global Migration", "CLASS_PreFilter", "Untitled1jj", and "Join1". A "More" button with up and down arrows is located to the right of the thumbnails.
- Other Content:** A section titled "Other Content" with a "Manage..." link. It contains the text: "Click Manage to create content here."

A right-hand sidebar contains additional navigation options:

- Common Actions:** A list of actions including "Open", "Manage My Content", "Edit Preferences", "Create Report", "Explore Data", "Manage Environment", and "Prepare Data".
- Links:** A list of links including "Introduction Video" and "See Other Videos from SAS".
- SAS Resources:** A list of resources including "Product Documentation", "SAS Customer Support", "SAS Training", "SAS Home Page", "Send Feedback", and "About SAS Visual Analytics".
- At the bottom of the sidebar is a "Follow SAS" button with social media icons for Twitter, Facebook, and YouTube.

SECURING DATA SOURCES, REPORTS, EXPLORATIONS

The screenshot shows the SAS Visual Analytics Administrator interface. The browser address bar indicates the URL: `http://rdcesx07144.race.sas.com:7980/SASVisualAnalyticsAdministrator/SAS_AdminClient_swf/SA`. The page title is "Manage Environment - SAS...". The interface includes a menu bar (File, Edit, View, Favorites, Tools, Help) and a sub-menu bar (File, View, Tools, Help). The main content area has tabs for "LASR Tables", "Mobile Devices", "Resource Monitor", "Process Monitor", "HDFS", and "OutputTable". The "OutputTable" tab is active, showing the "Authorization" section. Below this, the "Effective permissions:" section contains a table with the following data:

Identity	ReadMetadata	Read	WriteMetadata	Write	Administer
PUBLIC	⊘	⊘	⊘	⊘	⊘
SAS Administrators	✓	✓	✓	⊘	✓
SAS System Services	✓	✓	⊘	⊘	⊘
SASUSERS	⊘	✓	⊘	⊘	⊘
Mehler, Gary J.	✓	✓	✓	✓	✓

At the bottom of the interface, there is a note: "To change a setting, click a cell."

SETTING ROW-LEVEL SECURITY ON DATA SOURCES

The screenshot shows the SAS Visual Analytics Administrator interface. The main window is titled "Edit Permission Condition" and contains the following elements:

- Header:** "Enter an expression to specify the rows that can be viewed by user Mehler, Gary J.."
- Data items:** A tree view showing categories like "Character" (with items like Customer_Age_Group, Customer_Country, etc.) and "Numeric".
- Operators:** A tree view showing "Numeric (simple)" (with items like x - y, x * y, etc.) and "Comparison" (with items like Between, Missing, etc.).
- Expression Editor:** A central area where the condition is built. It shows the expression: $(Customer_Group = CatalogSales)$ AND $(Customer_Country = USA)$.
- Preview Table:** A table on the right showing the results of the condition. The table has a header "Administer" and several rows with green and red checkmarks.

The bottom of the window shows the status bar with "Connected: rdces07144.race.sas.com" and "GJM as Mehler, Gary J.". Buttons for "OK" and "Cancel" are visible at the bottom right.

BASIC ADMINISTRATION

- Understand LASR data serving
- Understanding hardware
- Load and manage data
- Manage security access
- **Monitor system**
- Control mobile access



MONITOR SYSTEM

- Observe memory, CPU, and network utilization
- See which LASR server processes are consuming memory or processing
- Determine which tables are available and their status
- Historic and other reports coming from Environment Manager later this year



BROWSING OVERALL HEALTH AND ACTIVITY

The screenshot displays the SAS Visual Analytics Administrator web interface. The browser address bar shows the URL: `http://rdcesx07144.race.sas.com:7980/SASVisualAnalyticsAdministrator/SAS_AdminClie`. The page title is "Manage Environment - SAS...".

The interface includes a navigation menu with "Home" and "Manage Environment" options. Below this, there are tabs for "LASR Tables", "HDFS", "Resource Monitor", "Process Monitor", and "Mobile Devices". A "Log Off" button is located in the top right corner.

On the left side, there is a "Folders" panel with a search box and a tree view of "SAS Folders". The tree view includes: "My Folder", "BILineage", "custom_VAT", "OneBI", "Products", "SAS Projects", "Shared Data", "System", and "User Folders".

The main content area is divided into two sections:

- Utilization History:** A line chart showing utilization over time. The Y-axis is labeled "Utilization" and ranges from 0 to 40. The X-axis represents time. A legend on the right indicates that the chart tracks CPU (green), Memory (blue), Network In (orange), and Network Out (red). Two data points are highlighted with callouts: "Memory utilization: 23.14%" and "Memory utilization: 23.15%".
- Real-Time View:** A table displaying real-time data for 32 servers. The table has multiple columns and rows, with a scroll bar on the right. Below the table, it states: "05/01/13 01:18:49 PM - 32 servers sampled".

At the bottom left, the connection information is: "Connected: rdcesx07144.race.sas.com:8561". At the bottom right, the user information is: "GJM as Mehler, Gary J.".

BASIC ADMINISTRATION

- Understand LASR data serving
- Understanding hardware
- Load and manage data
- Manage security access
- Monitor system
- **Control mobile device access**



CONTROL MOBILE DEVICE ACCESS

- Monitor login history
- Can manage via blacklist
 - A user or device gets added to blacklist as needed
 - Helpful if staff leaves organization, or a mobile device is lost
- Can manage via whitelist
 - Individuals or groups are enabled to access via mobile devices
 - Individuals or devices can be removed from access list if needed



BLACKLISTING IS IN USE BY DEFAULT

The screenshot shows the SAS Visual Analytics Administrator interface. The browser address bar indicates the URL: `http://rdcesx07144.race.sas.com:7980/SASVisualAnalyticsAdministrator/SAS_AdminClient/Manage Environment - SAS...`. The main navigation bar includes "Home" and "Manage Environment". Below this, there are tabs for "LASR Tables", "HDFS", "Resource Monitor", "Process Monitor", and "Mobile Devices". The "Log Off" button is visible in the top right.

The left sidebar shows a "Folders" section with a search bar and a tree view containing "SAS Folders", "My Folder", "BILineage", "custom_VAT", "OneBI", "Products", "SAS Projects", "Shared Data", "System", and "User Folders".

The main content area has tabs for "Logon History", "Manage Blacklist", "Manage Whitelist", and "Management History". The "Manage Blacklist" tab is active. A filter dropdown is set to "(none)", and there is a checkbox for "Include device history".

The table below displays the logon history for various users and devices. The row for user "gjm" is highlighted in green, indicating it is the current selection.

User ID	Device ID	Device Type	Device Mo...	OS Version	Applicatio...	Status	Timestamp
petina	7a4e78f1c2a7385d80fb9db3...	iPad	iPad	6.1.3	4.0	●	Monday, April 29...
bcidemo	37e232ccf27b3727e506e07f...	Android/ar...	samsung/...	4.1.2/JZO5...	4.0.128	●	Thursday, April ...
sasams	26d93ccacd969bee8d14b0a...	iPad	iPad	6.1.3	4.0	●	Thursday, April ...
sashcw	3f34e9fb97cbdfa2f40661863...	iPad	iPad	6.1.3	4.0	●	Thursday, April ...
bcidemo	f6a5763845b1e8dfd3ff4742e...	Android/ar...	samsung/...	4.1.2/JZO5...	4.0	●	Thursday, April ...
lamand	aec3414c26b8c10e47ff36eb...	Android/ar...	samsung/...	4.1.1/JRO0...	4.0.135 (BI...	●	Wednesday, May...
sakala	90a40dc1e024b9e50d1477d...	iPad	iPad	6.1.2	4.0	●	Wednesday, May...
prphad	6090abaf4d2e92ddaaf4f8cf3...	Android/ar...	asus/Nexu...	4.2.2/JDQ3...	4.0	●	Friday, April 26, ...
sashgp	12928e9254ee6511ad0b908...	iPad	iPad	6.1.3	4.0	●	Wednesday, May...
gjm	f85a827c56d5699b1a2ad44...	iPad	iPad	6.1.3	4.0	●	Tuesday, April 3...
grthor	4f27e3c5a7b32e979b598d6...	iPad	iPad	6.1.2	4.0	●	Wednesday, May...
sasyns	2e72a1cfca2cd507b65d082e...	Android/ar...	samsung/...	4.1.1/JRO0...	4.0.131 (BI...	●	Friday, April 26, ...

At the bottom of the window, the connection status is "Connected: rdcesx07144.race.sas.com:8561" and the user is identified as "GJM as Mehler, Gary J.".



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