

DB2 on Cloud

design proposal for a user experience

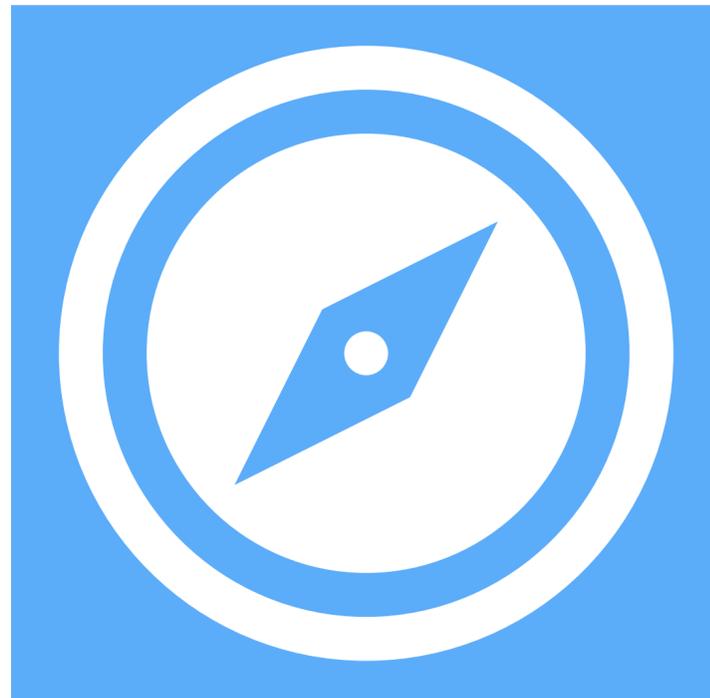
Damien Solomon | Design Lead | CDS Source

Dillon Eversman | UX Designer | CDS Source

Benjamin Resnick | Front End Developer | CDS Source

Table of Contents

DB2 on Cloud



1. User Research

Process, insights, and opportunities

2. Wireframes

DB2 on Cloud through CDSX

3. Atlas Wireframes

What does Atlas change?

USER RESEARCH

Links

Competitive analysis and personas [here](#)

User quote affinitization mural [here](#)

Full research insights deck [here](#)

15 INTERVIEWS

Business Expert

Technical Expert

1

HUMAN
RESOURCES

3

SALES

3

OFFERING
MANAGERS

2

DATABASE
ARCHITECTS

4

DEVELOPERS

2

DATABASE
ADMINISTRATORS

Clustering and Affinitization

User Research

Raw Notes

SQLDB Justin Fiore, Seon Hee Joo, Phil Hayes, Ram Neimark, Prashanth

Both Jayesh Shah, Eric Cargal, Kelly Schiamb

DB2 Marco Gomez, Gary Hagan, John Geraci, Phil Downey, Mike Winer

Database Setup

- Usage decides the type of database service chosen
- Want to provide flexibility in environment
- SQLDB are frequently used for logging and testing environments
- Customers setting up databases for their customers

Upgrading

- Notifications for upgrades/changes
- Needs for Changing/Upgrading Plans

Connectivity

- Blended Connectivity is an issue
- Impact of Connectivity

SQLDB

- Why SQLDB was chosen
- SQLDB Issues
- SQLDB usage is multi-tiered

Support

- Current Problems with support
- People don't know who to contact for support
- Potential concerns about help/support
- Who gets the blame when something goes wrong

Backups:

- Backups should be automatic, but allow the customer to change it according to their needs
- Users the system to take care of backups automatically
- Users and DBAs can't easily adjust backups
- Manual or customizable backup schedule
- Clearer Recovery is a must

The Cloud

- Value of Moving to Cloud
- Security is the primary concern when moving to the cloud
- Customers always ask about their data security
- The focus is on helping existing customers get to the cloud
- Disadvantages of cloud
- Proving a strategy for moving to the cloud

Job Roles

- Data Architects
- DBAs
- Developers
- Sales
- Ops/Project Managers

Clustering Notes

- What users currently monitor
- What users want to monitor
- Needs for Manager
- Prize for the IBM team
- Automated Processes
- How to discover new tech
- Location of Database...
- DB2 on Cloud is mostly do-it-yourself
- Value of a UI for Hosted
- Don't know what can work with DB2 (add-ons, plugins, and tools)
- Inconsistencies in the messaging/information for DB2

DB2 on Cloud Journey Map

User Research

○ = Area of pain point



Key Insights

User Research

Support is both obscure and unreliable.

Both experienced and new users frequently encounter issues in terms of support. Figuring out who to contact is not only difficult but often unknown. Users often turn to Google to troubleshoot their problems since they need immediate responses to problems that come up.

“You have got to remember a lot of times we are doing this stuff in the wee hours of the morning so not a lot of people hanging around waiting to answer questions.”

John Geraci

IBM IT Specialist

Key Insights

User Research

Integration with other services is unknown.

Currently, knowledge of which services and tooling work with DB2 on Cloud is almost nonexistent among most users. They asked if certain tools were compatible and also asked for recommendations. Sometimes, they would hack it themselves and use third-party services to accomplish their tasks.

“ We have learned going along as best we can. I went and found this third party tool [but] it would be nice if IBM had a product like that. ”

Gary Hagan

Advanced Programmer Analyst;
Application Developer

Key Insights

User Research

Monitoring system status is critical for responsive issue resolution.

DBAs want monitoring tools that transparently expose the system's performance, especially when there is an issue that needs to be addressed. For DB2 on Cloud, users weren't aware of various services that automate notification, and were scrambling when problems arose. Notifications were coming from their clients or engineers working with the database.

“If there is something for me to address fine, let me know. But if there is nothing for me to address I don't want to know about it.”

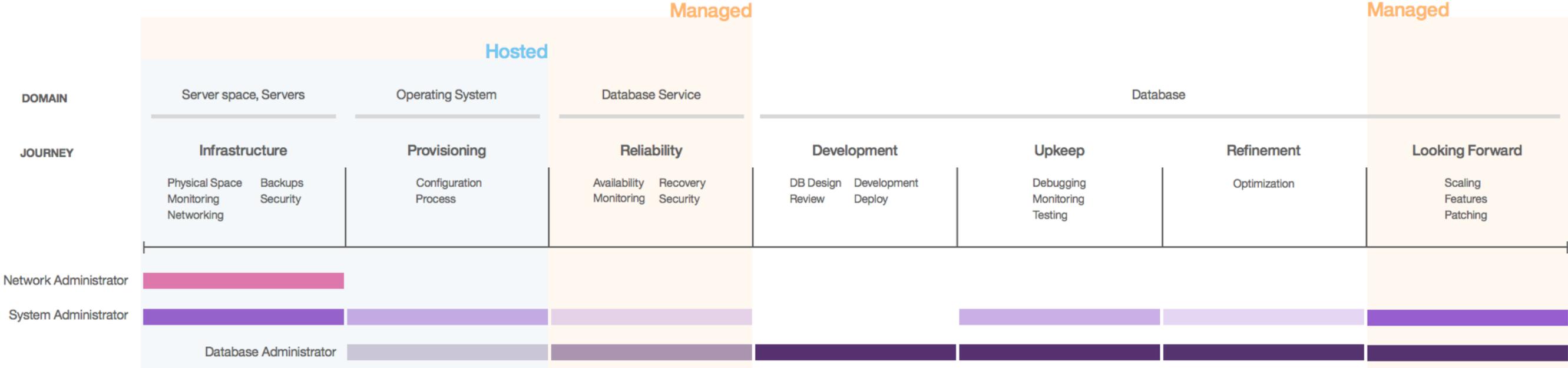
John Geraci

IBM IT Specialist

Hosted versus Managed DBaaS

User Research

Users expect cloud services to have managed characteristics.



Almost all users expressed how cloud should provide some level of managed service. Users stated that characteristics of cloud should include automatic backups and overall database health since it “takes work off the ...operations team” and provides “less headache and less maintenance.”

“I think you need to make things so that people can actually do the job and not worry about managing it. I think that is the approach you have got to take. Especially for cloud”

John Geraci
IBM IT Specialist

High Level Design Considerations

User Research

Them

How might a user...

- Discover, purchase, and set up a DB2 instance on the cloud for his/her company without having to contact support for troubleshooting?
- Perform db monitoring and automated tasks (i.e. backups, db uptime, etc.), and immediately reach out to the correct source for customer support as issues arise?
- Launch directly into a service that's an extension of DB2 on Cloud?

Us

How might we...

- Provide seamless integration across key IBM cloud services to provide the most value to our users?
- Display overall health monitoring?
- Provide limited and/or customizable automated functionality (i.e. backups)?
- Make support a key feature from the console, not just through Bluemix?
- Educate our users on DB2 on Cloud's limitations and capabilities?
- Recommend tooling that solves our user's most common problems?

WIREFRAME WALKTHROUGH

DB2 on Cloud Discover Page

Wireframe Walkthrough

DB2 on Cloud

The power of IBM DB2 with the agility of cloud deployment... all under your control

IBM® DB2® is a multi-workload relational database system that improves business agility and reduces cost by better managing your company's core asset: its data. And now, it's available on demand as a cloud service.

[Request Quote](#) or call 1.877.426.3774

Customers leveraging DB2 on Cloud

Make DBA's Lives Easier
You have full administrative control; automatic provisioning, configuration, and facilitated HA/DR setup help lighten your workload.

Powered by the secure, high-performance IBM Cloud
IBM DB2 on Cloud includes all DB2 security features, including data encryption, and your DBAs have full control over database access and operation. In addition, IBM DB2 on Cloud is available on dedicated, single-tenant IBM Cloud servers, which helps ensure performance will be more secure and unaffected by "noisy neighbors."

Your choice of IBM DB2 on Cloud engine type
Your IBM DB2 on Cloud instance can be equipped with your choice of DB2 database engine: either the **IBM DB2 Workgroup Server Edition**, or the **IBM DB2 Advanced Enterprise Server Edition** feature set.

Simple migration via DB2 and Oracle compatibility
DB2 on Cloud SQL is compatible with on-premise versions of IBM DB2 and Oracle Databases. This makes it easy to migrate application code to and from DB2 on Cloud.

DB2 on Cloud

The power of IBM DB2 with the agility of cloud deployment... all under your control

IBM DB2 on Cloud includes all DB2 security features, including data encryption, and your DBAs have full control over database access and operation. In addition, IBM DB2 on Cloud is available on dedicated, single-tenant IBM Cloud servers, which helps ensure performance will be more secure and unaffected by "noisy neighbors."

[Request Quote](#) or call 1.877.426.3774

Customers leveraging DB2 on Cloud

Make DBA's Lives Easier
You have full administrative control; automatic provisioning, configuration, and facilitated HA/DR setup help lighten your workload.

Powered by the secure, high-performance IBM Cloud
IBM DB2 on Cloud includes all DB2 security features, including data encryption, and your DBAs have full control over database access and operation. In addition, IBM DB2 on Cloud is available on dedicated, single-tenant IBM Cloud servers, which helps ensure performance will be more secure and unaffected by "noisy neighbors."

Your choice of IBM DB2 on Cloud engine type
Your IBM DB2 on Cloud instance can be equipped with your choice of DB2 database engine: either the **IBM DB2 Workgroup Server Edition**, or the **IBM DB2 Advanced Enterprise Server Edition** feature set.

Simple migration via DB2 and Oracle compatibility
DB2 on Cloud SQL is compatible with on-premise versions of IBM DB2 and Oracle Databases. This makes it easy to migrate application code to and from DB2 on Cloud.

Easy integration
DB2 on Cloud can be accessed just as on-premise versions of DB2 can, so it works with the same applications, security, ETL, messaging, monitoring, and systems management tools you use today.

Cloud Strategy Adherence
IBM DB2 on Cloud helps you comply with mandates to distribute projects to the cloud in order to reduce capital IT expenditures and conserve on-premise data center resources.

Regulatory Compliance
IBM DB2 on Cloud is great for proofs of concept and other short-term development or analysis projects, because you only have to pay for as long as you use it.

Disaster Recovery
Your on-premise DB2 instances can replicate data to IBM DB2 on Cloud, which can be your fallback in the event of a primary data center disaster.

Short-Term Database Projects
Deploy DB2 on Cloud to multi-layer data centers around the world to help you meet requirements (regulatory or otherwise) for hosting data in specific countries or regions.

Plans & Prices

Fixed monthly fee

	Small	Medium	Large	X-Large	2XL
Standard	\$1,000	\$1,700	\$3,000	\$6,000	\$6,000
Advanced	\$1,250	\$2,200	\$4,000	\$8,000	\$8,000
Nodes	Virtual Private	Virtual Private	Virtual Private	Bare Metal	Bare Metal
Cores	2 x 2.0 GHz	4 x 2.0 GHz	8 x 2.0 GHz	12 x 2.4 GHz	12 x 2.4 GHz
Memory	8 GB	16 GB	32 GB	128 GB	128 GB
Storage	100 GB, 500 GB SAN 100 GB @ 500 IOPS	100 GB, 5000 GB SAN 100 GB @ 1200 IOPS	100 GB, 500 GB SAN 100 GB @ 1200 IOPS	2 x 800 GB SSD @ RAID 1 100 GB @ 1200 IOPS	2 x 800 GB SSD @ RAID 1 2 x 800 GB SSD @ RAID 6
Network	1 Gbps Public & Private Uplinks			10 Gbps Redundant & Private Uplinks	
OS	RWEL 7.0				

[Request Quote](#) or call 1.877.426.3774

Related Offerings

IBM Cloud Managed Services for DB2
IBM Cloud Managed Services for DB2
IBM Cloud Managed Services for DB2
IBM Cloud Managed Services for DB2

Bluemix Reserve Instance

Wireframe Walkthrough

The screenshot shows the IBM Bluemix DB2 on Cloud console. A modal dialog titled "Reserve Your Dedicated Instance" is open, displaying details for the "Standard Medium" plan. The modal includes a list of specifications, a description of the plan's capabilities, and a form to provide contact information (email and phone number) and additional comments. A "REQUEST" button is visible on the right side of the console.

Reserve Your Dedicated Instance

- Standard Medium**
 - Private 4 x 2.0 GHz Cores
 - 16GB RAM
 - 1x100GB(SAN), 1x1TB (SAN)
 - 1 Gbps Network
 - 100GB at 1200 IOPS
 - \$1,700.00 USD/Instance

Standard Medium plan includes capabilities for a robust development and test database, addressing normal OLTP and analytic workloads. Standard Medium plan comes with DB2 Workgroup Server Edition License bundled with Native Encryption.

A dedicated sales team is ready to create your reserved instance. Confirm your details, and a member of the team will contact you.

ssuid@email.com * Phone number (optional)

Additional comments (optional)

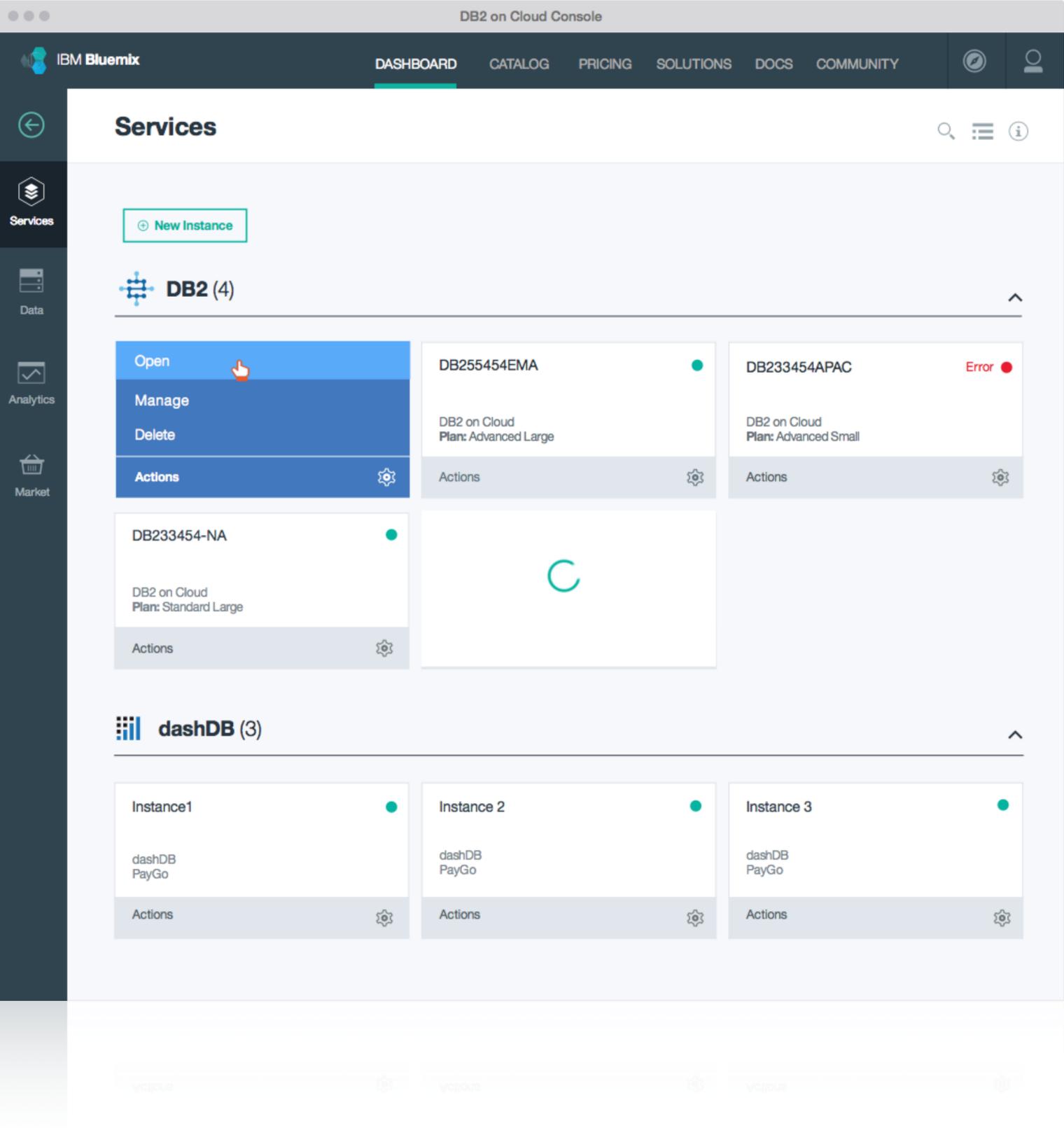
SEND

REQUEST

Plan	Features	Price
Standard Small	Private 2 x 2.0 GHz Cores 8GB RAM 1x100GB (SAN), 1x500GB (SAN) 1 Gbps Network 100GB at 500 IOPS	\$1,000.00 USD/Instance
Standard Medium	Private 4 x 2.0 GHz Cores 16GB RAM 1x100GB (SAN), 1x1TB (SAN) 1 Gbps Network 100GB at 1200 IOPS	\$1,700.00 USD/Instance
Standard Large	Private 8 x 2.0 GHz Cores 32GB RAM 1x100GB (SAN), 1x2TB (SAN) 1 Gbps Network 100GB at 2000 IOPS	\$3,400.00 USD/Instance

CDSX Data Services

Wireframe Walkthrough



Database List View

Wireframe Walkthrough

Ongoing Research Topics

- How do we appropriately expose the complexity of configurable database actions?
- Do users want to look at aggregated databases across instances?

The screenshot shows the IBM Bluemix DB2 on Cloud Console interface. The top navigation bar includes 'IBM Bluemix', 'DASHBOARD', 'CATALOG', 'PRICING', 'SOLUTIONS', 'DOCS', and 'COMMUNITY'. The main content area is titled 'Services > DB2 on Cloud Databases' and has tabs for 'Overview', 'Connections', 'Admin', 'Backup', and 'Support'. A 'Create Database' button is located in the top right of the main area. Below this is a table of database instances with columns for Database Name, Plan, Version, Usage, Status, and Actions. A context menu is open over the 'DB 334_223' instance, showing options: Restart, Export, Backup, Restore, Empty, and Delete. A hand cursor is pointing at the 'Restore' option.

Database Name	Plan ^	Version ^	Usage	Status	Actions
DB Name 1	Small	9.7	30%	Available	⚙️
DB 334_223	Large	9.7	25%	Available	⚙️
DB Name 3	2XL	10.1	12%	Error	⚙️
DB Name 4	Small	9.8	92%	Backing up	⚙️
DB Name 5	Small	10.1	53%	Available	⚙️
DB Name 6	Large	9.8	14%	Error	Restart
DB Name 7	2XL	9.8	20%	Available	Export
DB Name 8	Small	10.1	39%	Available	Backup

Getting Started

Wireframe Walkthrough

The screenshot displays the IBM Bluemix DB2 on Cloud Console interface. At the top, the navigation bar includes 'IBM Bluemix', 'DASHBOARD', 'CATALOG', 'PRICING', 'SOLUTIONS', 'DOCS', and 'COMMUNITY'. The breadcrumb trail shows 'Services > DB2 on Cloud > Databases'. The instance name 'DB 334_223' is prominently displayed, with tabs for 'Overview', 'Connections', 'Admin', 'Backup', and 'Support'. The main content area features a blue header 'Getting Started with DB2' and a video player. Below this, the 'Details' section contains a table with the following data:

Plan	Version	Size	Usage	Status	Actions
Large	DB2 v10.1	512 MB	128 MB of 512 MB Storage 30% Usage	● Available	⚙️

The 'Monitoring' section provides a summary of system metrics:

CPU	Memory	Storage	Read IOPS	Write IOPS
10.8%	560 MB	3,456 MB	0.117/sec	1.38/sec

Database Details

Wireframe Walkthrough

The screenshot displays the IBM Bluemix DB2 on Cloud Console interface. At the top, the breadcrumb navigation shows 'Services > DB2 on Cloud > Databases'. The database name 'DB 334_223' is prominently displayed. Below the name are tabs for 'Overview', 'Connections', 'Admin', 'Backup', and 'Support'. The 'Overview' tab is active, showing a 'Details' section with a table of database specifications. A dropdown menu is open over the 'Actions' column of this table, listing options: Restart, Export, Backup, Restore (highlighted with a hand cursor), Empty, and Delete. Below the details table is a 'Monitoring' section with a table showing CPU usage (10.8%), Memory (560 MB), Storage (3,456 MB), Read IOPS (0.117/sec), and Write IOPS (1.38). At the bottom, a 'Tools' section features a card for 'IBM Data Server Manager - Database Administration & Basic Performance Management Tool' with a 'Launch DSM' button.

DB2 on Cloud Console

IBM Bluemix

DASHBOARD CATALOG PRICING SOLUTIONS DOCS COMMUNITY

Services > DB2 on Cloud > Databases

DB 334_223

Overview Connections Admin Backup Support

Details

Plan	Version	Size	Usage	Status	Actions
Large	DB2 v10.1	512 MB	128 MB of 512 MB Storage 30% Usage	● Available	<ul style="list-style-type: none">RestartExportBackupRestoreEmptyDelete

Monitoring

CPU	Memory	Storage	Read IOPS	Write IOPS
10.8%	560 MB	3,456 MB	0.117/sec	1.38

Tools

IBM Data Server Manager - Database Administration & Basic Performance Management Tool

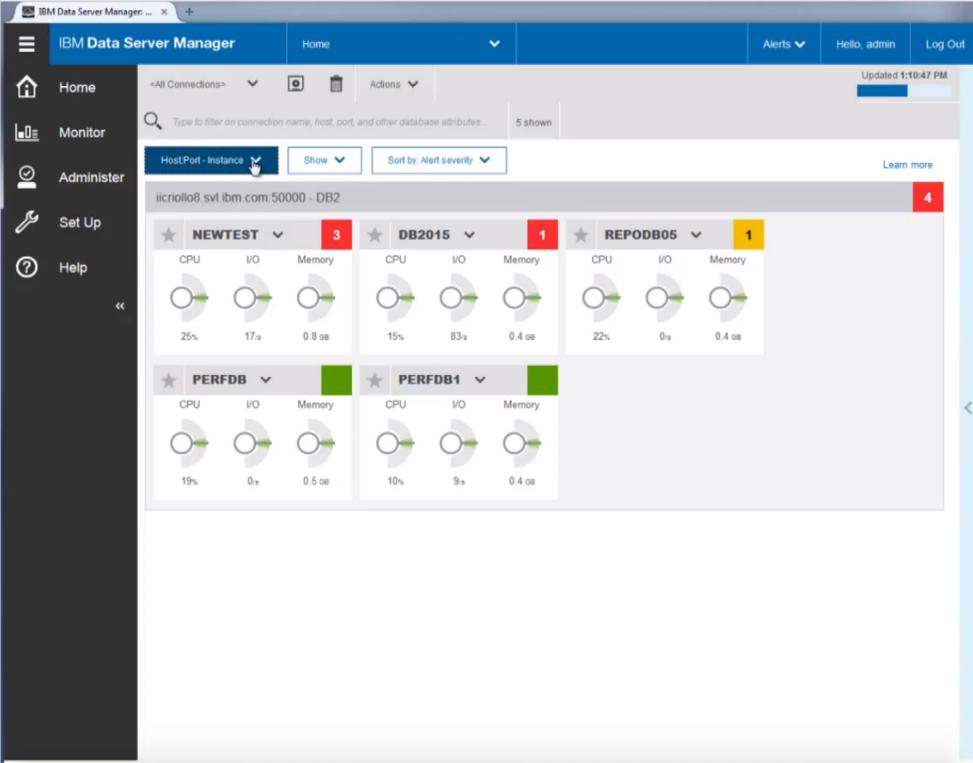
Launch DSM

Data Server Manager (DSM)

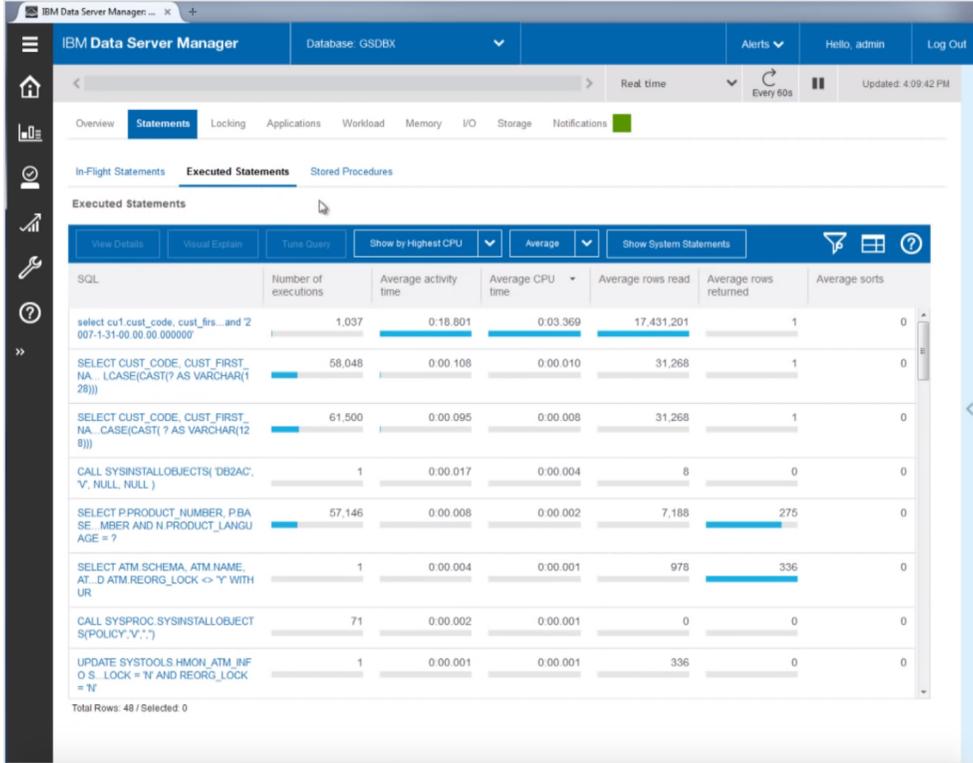
Aside

Data Server Manager (DSM)

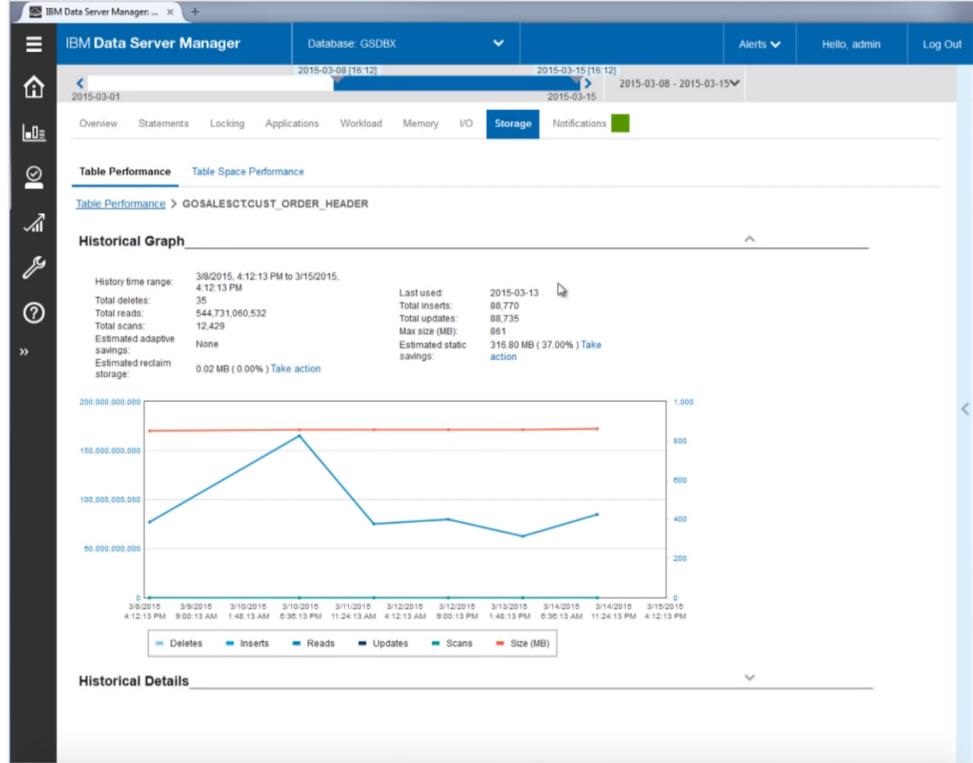
Wireframe Walkthrough Aside



Scalable Management



Simplified Monitoring and Administration



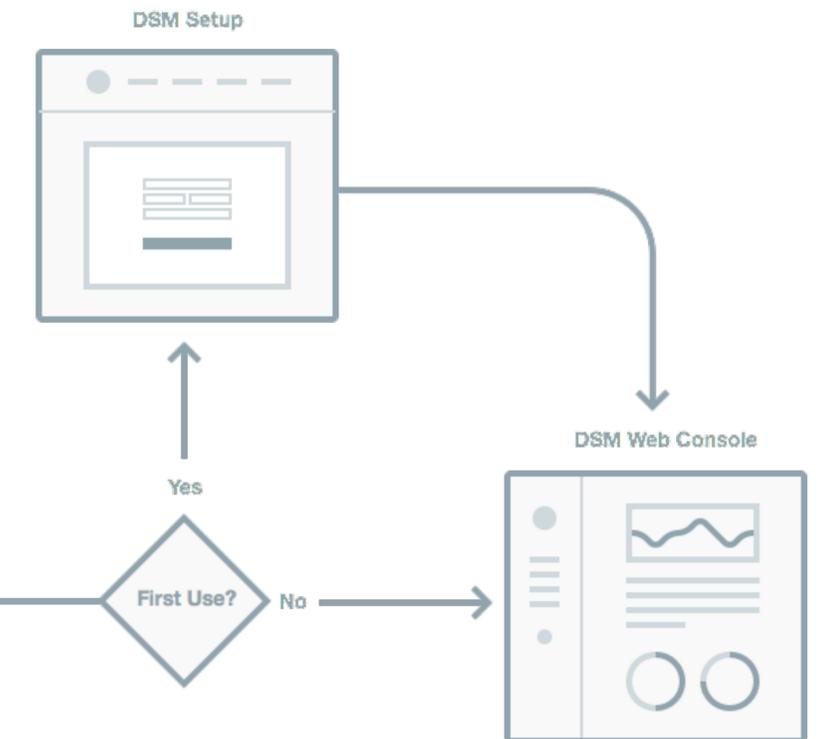
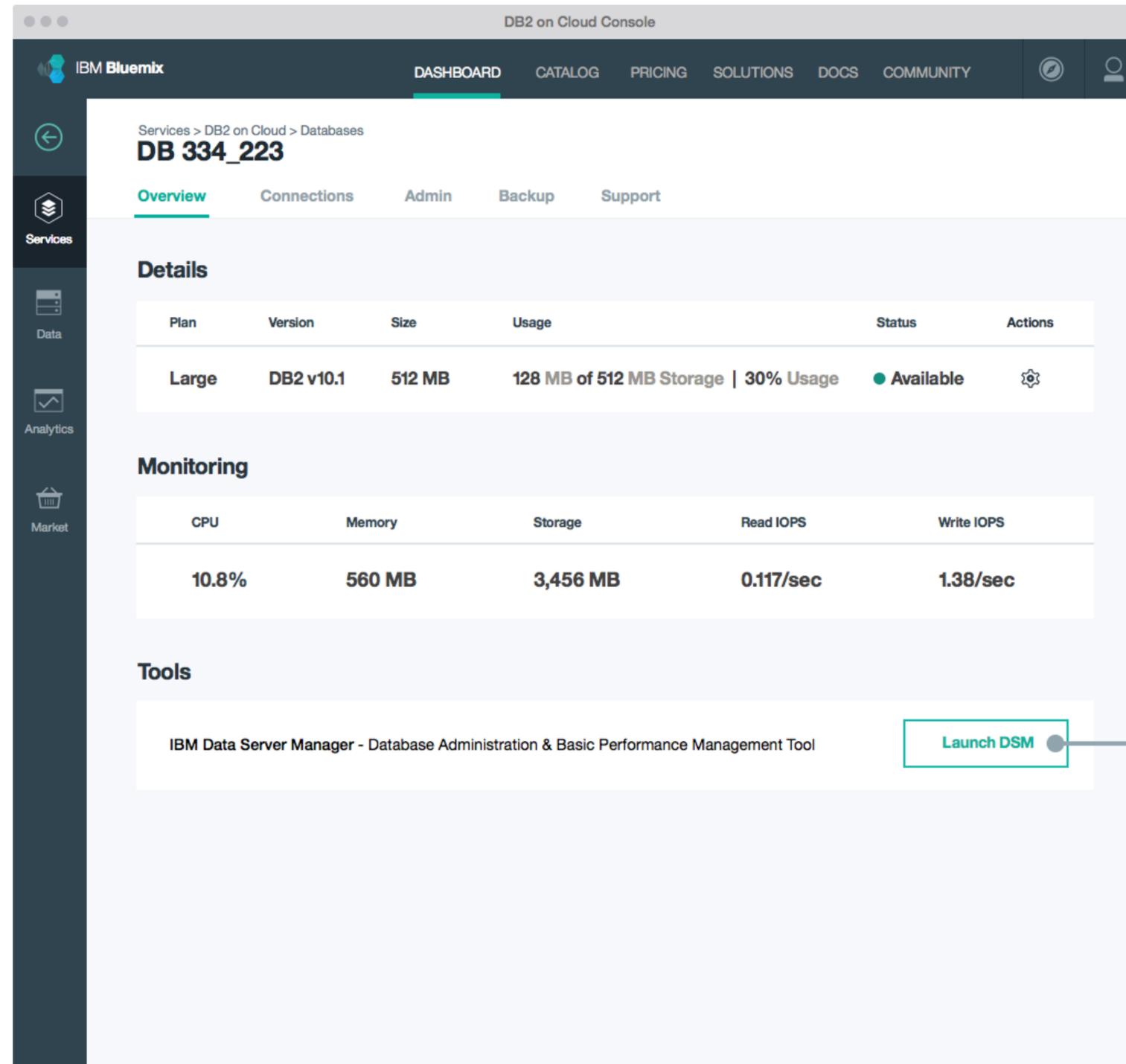
Predictable Database Execution

Integration with DSM

Wireframe Walkthrough

Ongoing Research Topic

- How should we incorporate DSM to create the best user experience?



Connections

Wireframe Walkthrough

Ongoing Research Topic

- What additional information do people need to see within Connections?

DB2 on Cloud Console

IBM Bluemix

DASHBOARD CATALOG PRICING SOLUTIONS DOCS COMMUNITY

Services > DB2 on Cloud > Databases

DB 334_223

Overview **Connections** Admin Backup Support

Connection Settings

Version	DB2LUW
Host Name	<host name from VCAP_SERVICES credentials>
SSL port	50001
Database Name	<host name from VCAP_SERVICES credentials>

SSL certificate strings

Version	DB2LUW
JDBC SSL String	jdbc:db2://<hostname from VCAP_SERVICES credentials>:50001/<database name from VCAP_SERVICES credentials>;sslConnection=true;
ODBC SSL DSN	DRIVER={IBM DB2 ODBC DRIVER}; DATABASE=<host name from VCAP_SERVICES credentials>; HOSTNAME=<host name from VCAP_SERVICES credentials>; PORT=50001; PROTOCOL=TCPIP; UID=<your username from VCAP_SERVICES credentials>; PWD=<your username from VCAP_SERVICES credentials>; Security=ssl;

[Download](#) the SSL certificate

Drivers

You may need to download and install and download a driver package. [Learn more](#)

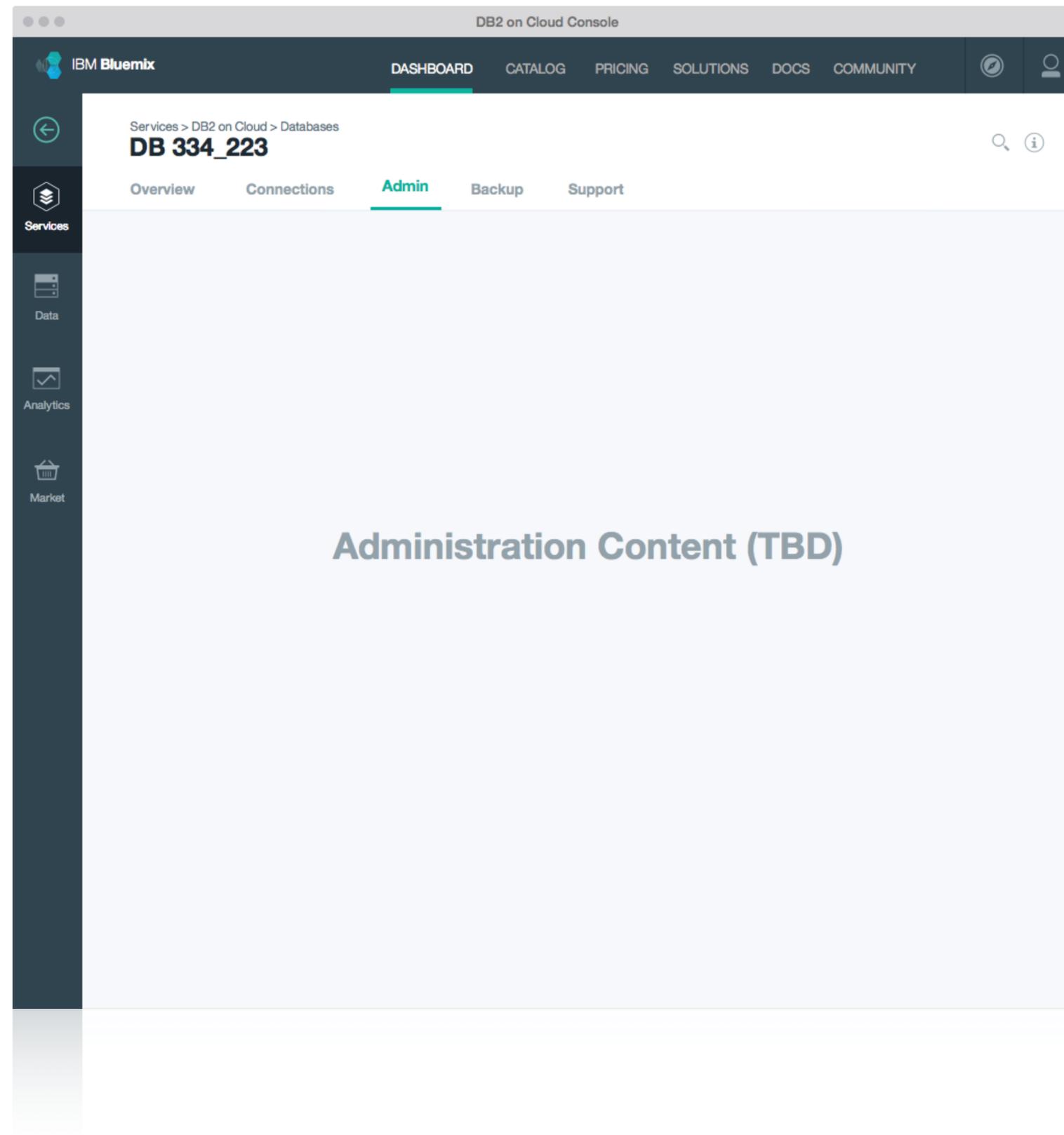
[Driver package for Windows 64-bit \(92.6 MB\)](#)
[Driver package for Linux 64-bit \(66.6 MB\)](#)
[Driver package for Mac OS X 64-bit \(53.8 MB\)](#)

Admin

Wireframe Walkthrough

Ongoing Research Topics

- What administrative information could be effectively used here?
- How do you effectively manage user permissions?



Backup

Wireframe Walkthrough

The screenshot shows the 'Backup' page for a database instance 'DB 334_223'. The interface includes a top navigation bar with 'IBM Bluemix' and various menu items like 'DASHBOARD', 'CATALOG', 'PRICING', 'SOLUTIONS', 'DOCS', and 'COMMUNITY'. A left sidebar contains navigation icons for 'Services', 'Data', 'Analytics', and 'Market'. The main content area has tabs for 'Overview', 'Connections', 'Admin', 'Backup', and 'Support'. Under the 'Backup' tab, there are sections for 'Automatic backups' (with a toggle switch and a 'Change' link) and 'Manual backup' (with a 'Backup Now' button). Below these is a 'Backup history' table with columns for 'Backup Date', 'Size', 'Status', and 'Actions'.

DB2 on Cloud Console

IBM Bluemix

DASHBOARD CATALOG PRICING SOLUTIONS DOCS COMMUNITY

Services > DB2 on Cloud > Databases

DB 334_223

Overview Connections Admin **Backup** Support

Backups

Automatic backups

Every 24 hours at 16:00 UTC [Change](#)

Manual backup

[Backup Now](#)

Backup history

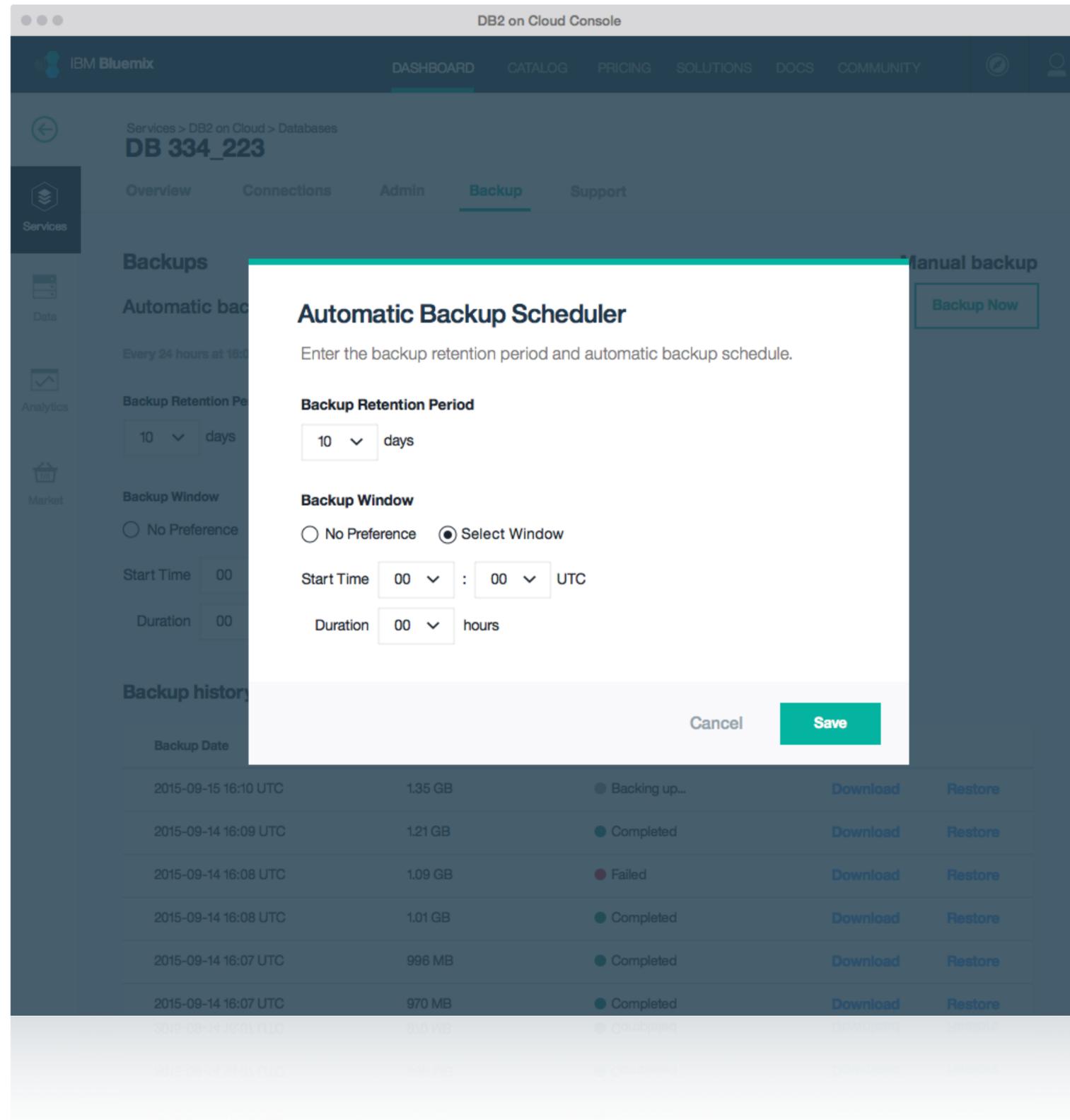
Backup Date	Size	Status	Actions
2015-09-15 16:10 UTC	1.35 GB	● Backing up...	Download Restore
2015-09-14 16:09 UTC	1.21 GB	● Completed	Download Restore
2015-09-14 16:08 UTC	1.09 GB	● Failed	Download Restore
2015-09-14 16:08 UTC	1.01 GB	● Completed	Download Restore
2015-09-14 16:07 UTC	996 MB	● Completed	Download Restore
2015-09-14 16:07 UTC	970 MB	● Completed	Download Restore

Backup Setup - Modal

Wireframe Walkthrough

Ongoing Research Topics

- Do users want comprehensive backup functionality through an interface?
- Should auto backup include both replication and more frequent partial backups?



Restore

Wireframe Walkthrough

DB2 on Cloud Console

IBM Bluemix

DASHBOARD CATALOG PRICING SOLUTIONS DOCS COMMUNITY

Services > DB2 on Cloud > Databases

DB 334_223

Overview Connections Admin **Backup** Support

Backups

Automatic backups

Every 24 hours at 16:00 UTC [Change](#)

Manual backup

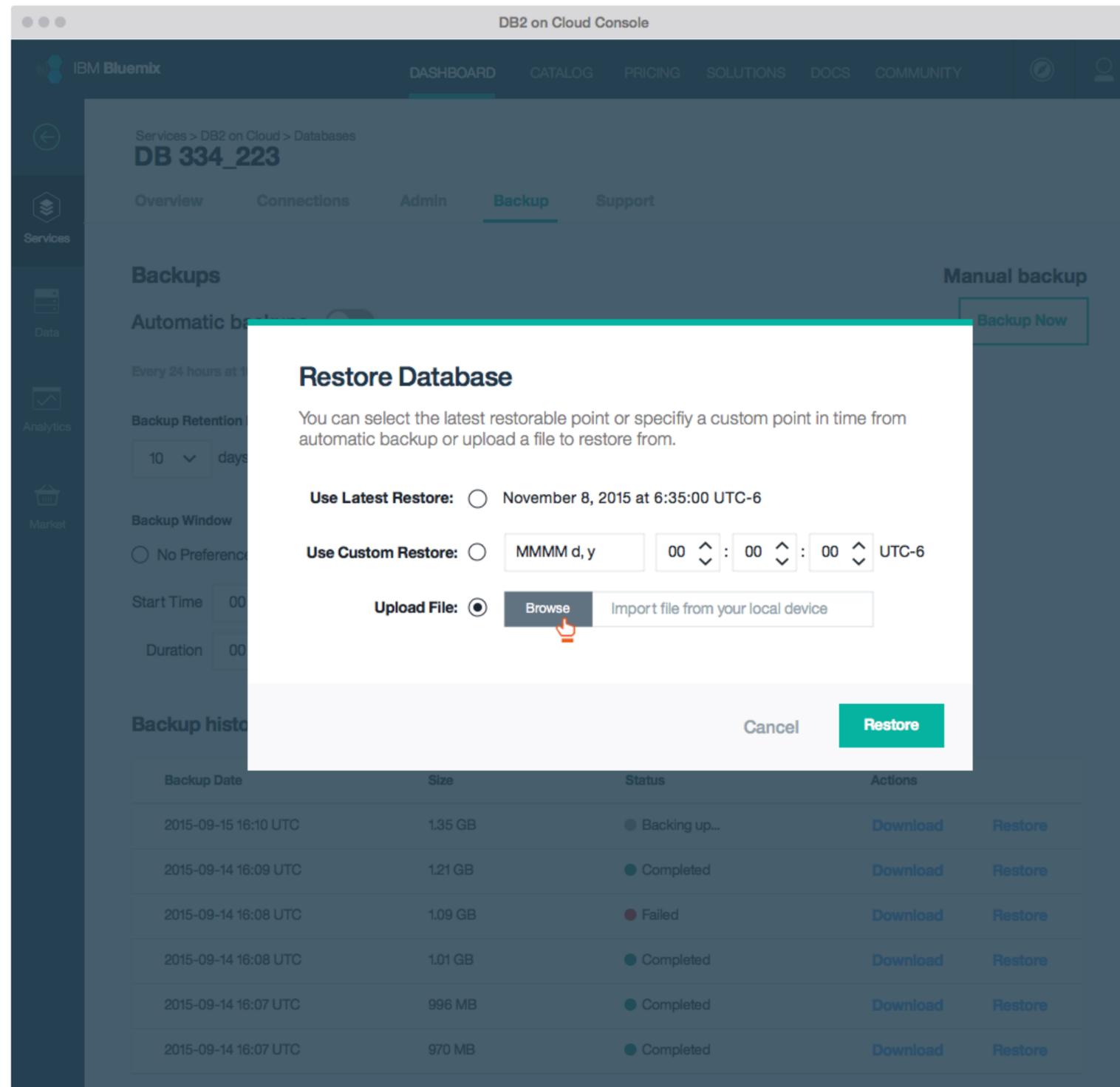
[Backup Now](#)

Backup history

Backup Date	Size	Status	Actions	
2015-09-15 16:10 UTC	1.35 GB	● Backing up...	Download	Restore
2015-09-14 16:09 UTC	1.21 GB	● Completed	Download	Restore
2015-09-14 16:08 UTC	1.09 GB	● Failed	Download	Restore
2015-09-14 16:08 UTC	1.01 GB	● Completed	Download	Restore
2015-09-14 16:07 UTC	996 MB	● Completed	Download	Restore
2015-09-14 16:07 UTC	970 MB	● Completed	Download	Restore

Restore Database Modal

Wireframe Walkthrough

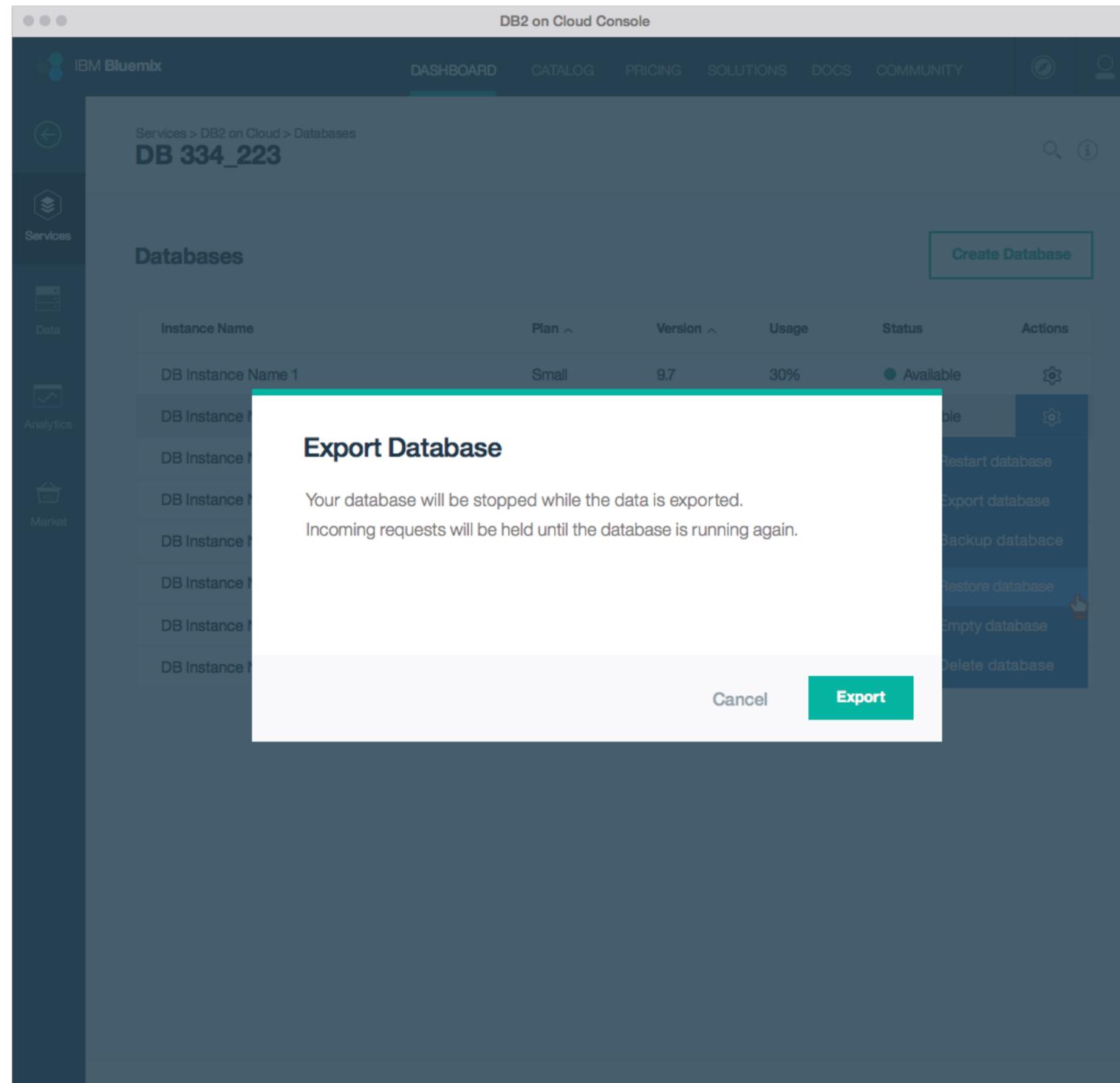


Export Database Modal

Wireframe Walkthrough

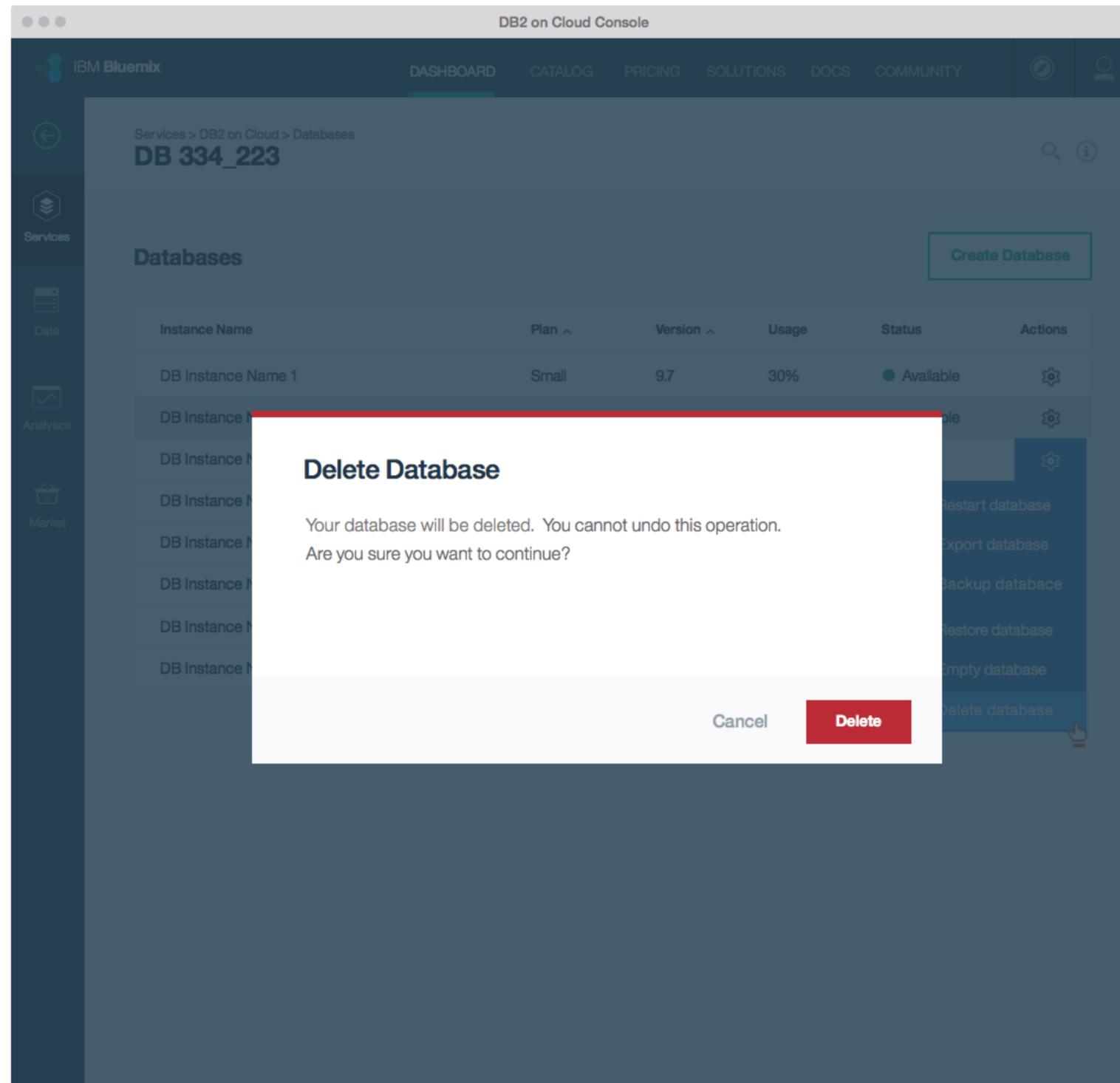
Ongoing Research Topics

- Should we allow users to export backups from a range of specified dates?



Delete Database Modal

Wireframe Walkthrough



Support

Wireframe Walkthrough

DB2 on Cloud Console

IBM Bluemix

DASHBOARD CATALOG PRICING SOLUTIONS DOCS COMMUNITY

Services > DB2 on Cloud

DB 334_223

Overview Connections Admin Backup **Support**

Get Help

Explore existing support articles for DB2 on Cloud.

Get answers now. Search our documentation and posts from the Stack Overflow DB2 on Cloud community.

Frequently Asked Questions

Common Issues

- [Connection Errors](#)
- [Adding SSL security](#)
- [Where can I get drivers for DB2?](#)
- [How do I restore an HADR Backup?](#)

[See All >](#)

Getting Started

- [Connection your Application to DB2](#)
- [Setting up Automatic Backup](#)
- [Running Data Server Manager](#)
- [Setting up Alerts](#)

[See All >](#)

Support Tickets

Ticket ID	Date	Status	Actions
40932432v166	2015-09-14 16:08 UTC	● In Queue	View Cancel
342_888324v2	2015-09-14 16:07 UTC	● Resolved	View Cancel
349873299v2	2015-09-14 16:07 UTC	● In Progress	View Cancel

[Create Ticket](#)

Looking Ahead

Ongoing Research Topics Compilation

Looking Ahead

- How do we appropriately expose the complexity of configurable database actions?
- Do users want to look at aggregated databases across instances?
- How should we incorporate DSM to create the best user experience?
- Do users want comprehensive backup functionality through an interface?
- Should auto backup include both replication and more frequent partial backups?
- What additional information do people need to see within Connections?
- What administrative information could be effectively used here?
- How do you effectively manage user permissions?
- Should we allow users to export backups from a range of specified dates?

Next Steps

Looking Ahead

Implementation

- Coordinate with DB2 on Cloud development team
- Continue to develop our design direction through close collaboration with Peter Bradford
- Move forward in discussions with the DSM team
- Work with Bluemix to inform and be informed of evolving patterns

User Research

- Answer the questions posed by our ongoing research topics through follow-up interviews, discussions with SMEs, and further evaluation of DB2's capabilities and limitations
- Evaluate the proposed web console with users and SMEs to validate the design and incorporate feedback
- Continue to explore the level of complexity that DBAs would benefit from within the context of a web console

Questions?