



# Best Practices: Transitioning to the Cloud

Hans Koorneef, Technical Director Project Delivery, EMEA

# Best Practices: Transitioning to the Cloud

- Find out the advantages of transitioning your ProjectWise data sources to the Microsoft Azure cloud.

You will get the insights into how to optimize and learn about Bentley's initial and ongoing support for this transition through migration and maintenance.

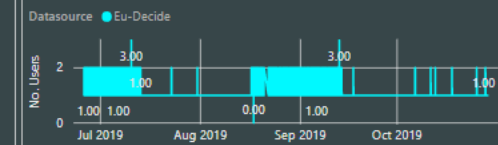
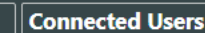


# Bentley Responsibilities

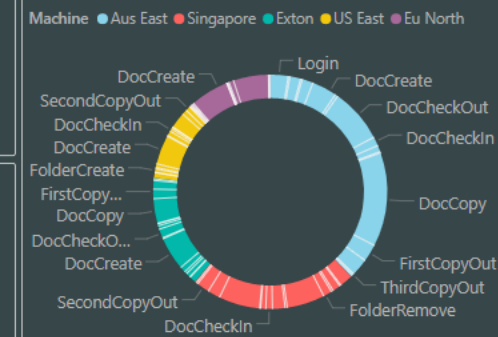
- Operations Management
  - Proactive Monitoring
  - Reporting
  - SLA Tracking / Management
  - Maintain Systems Performance
  - Troubleshoot Server Issues
  - Disaster Recovery\Business Continuity
  - Upgrades to Server OS
  - Change Management
  - Systems Maintenance
  - Security Monitoring
  - Data Center Physical Security
- Service / Support Desk
  - Service Desk for
- Problems/Incidents
  - Service Request Fulfillment
  - System Level Administrative Configurations
- System Deployment
  - Access & Security Management
  - Monitoring
  - Problems / Incidents
  - Updates/Upgrades
  - High Availability
- Infrastructure Management
  - Access & Security
  - Monitoring
  - Problems / Incidents
  - Patches / Updates
  - Capacity Planning
- Continuity
- Availability
- Implementation
  - Server Installations and Configurations
  - Server/Client Customizations
  - Global Project Coaching / Configuration
  - Project Health Checks
  - Adoption Services
  - Best Practices Coaching
  - Remote Caching Server Configuration

**Caching Enabled**

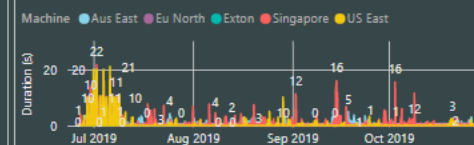
False



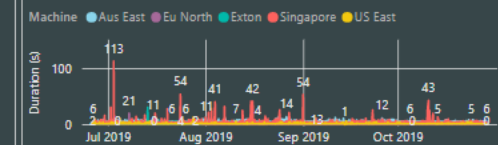
### Machine & Action Comparison



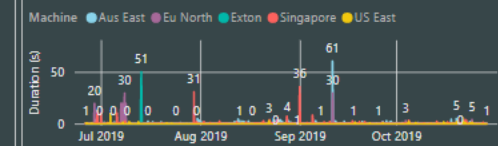
## Document Third Copy Out



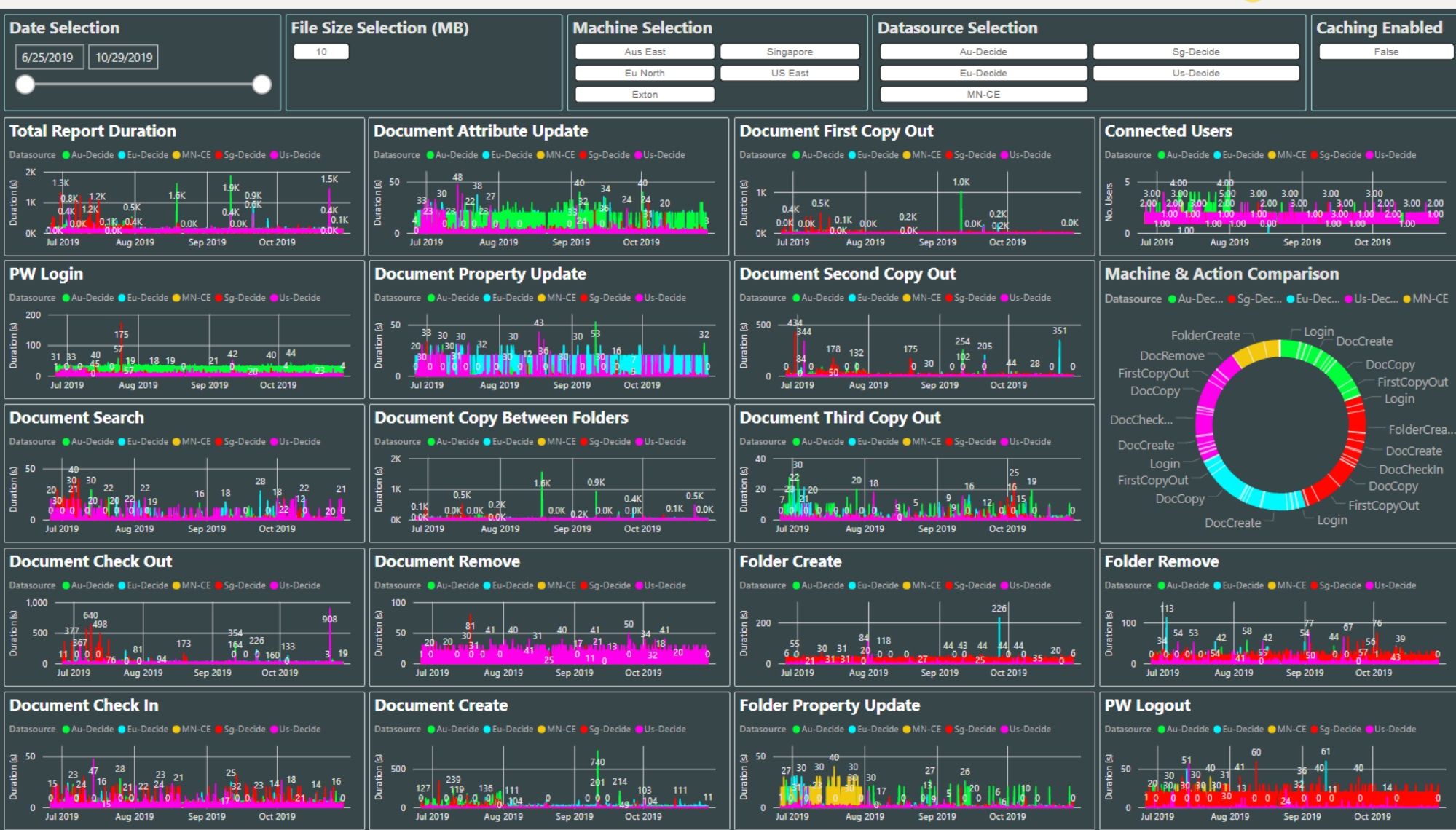
Folder Remove



## PW Logout



- MachineOverview
- DatasourceOverview
- CachingOverview
- MachineComparison
- DatasourceComparison
- CachingComparison

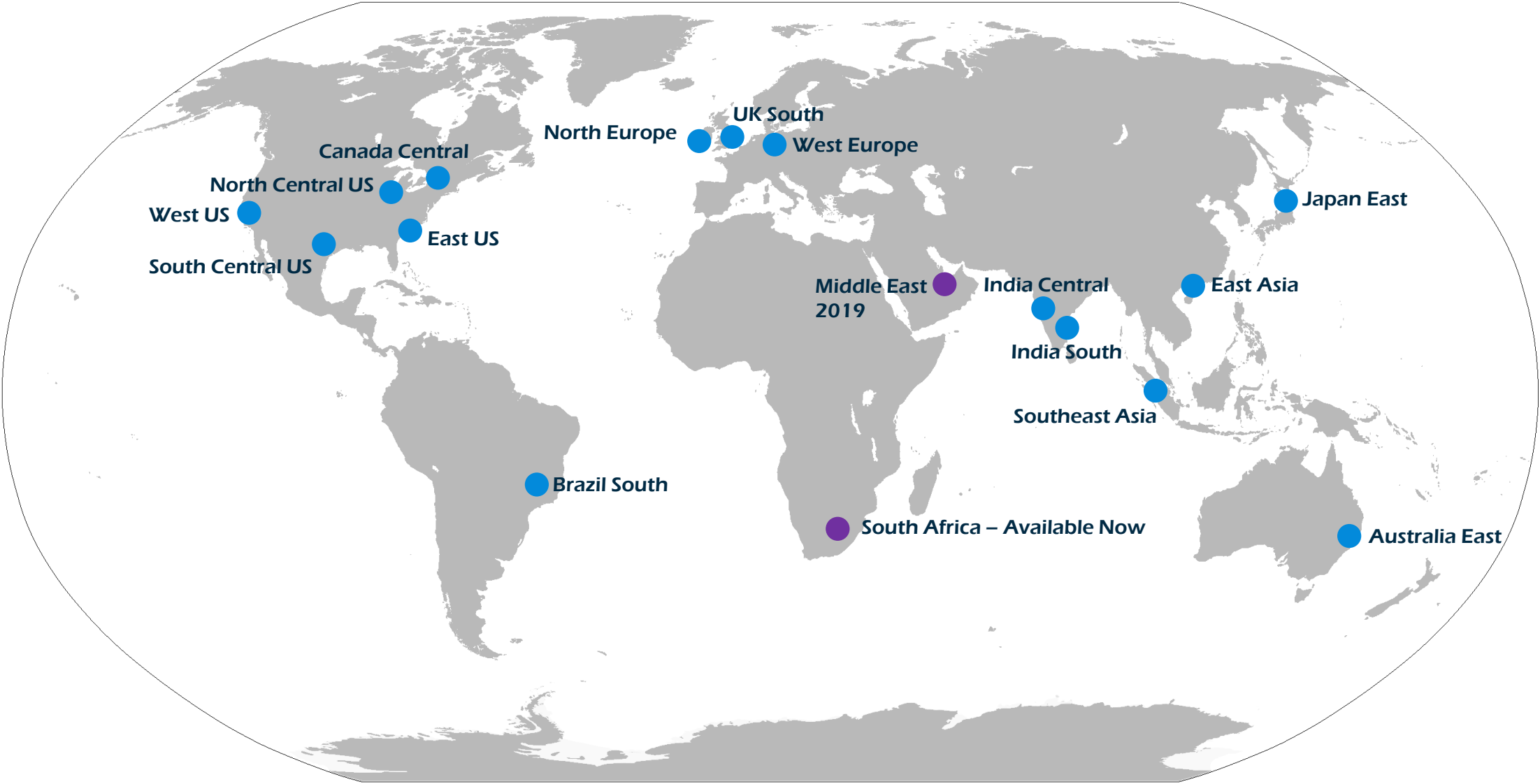


# Reference Document

- System Overview
- Resource Requirements
- Licensing
- Installing Clients
- Technical Support



# Datacenter Locations



# AzureSpeed.com

←

→

http://www.azurespeed.com/

Search...

Azure Latency Test - Azure ...

AzureSpeed.com

Latency Test

CDN Test

Upload Speed Test

Large File Upload Speed Test

Download Speed Test

PsPing Latency Test

Cloud Region Finder

Information

Azure Billing Meters

Azure Environments

Azure Geographies

Azure Regions

Azure Sovereign Clouds

Azure VM Pricing

Datacenter IP Ranges

References

Azure Latency Test

Test network latency from your IP location to Azure datacenters around the world.

Please select regions

Asia Pacific: check all uncheck all

☐ East Asia ☐ Southeast Asia ☐ Japan West ☐ Japan East ☐ Australia East ☐ Australia Southeast ☐ South India ☐ Central India ☐ West India ☐ Korea Central ☐ Korea South

Americas: check all uncheck all

☐ Central US ☐ East US ☒ East US 2 ☒ West US ☒ North Central US ☒ South Central US ☐ Brazil South ☐ Canada Central ☐ Canada East ☐ West Central US ☐ West US 2

Europe: check all uncheck all

☐ North Europe ☐ West Europe ☐ UK South ☐ UK West ☐ France Central

Middle East and Africa: check all uncheck all

☐ South Africa North

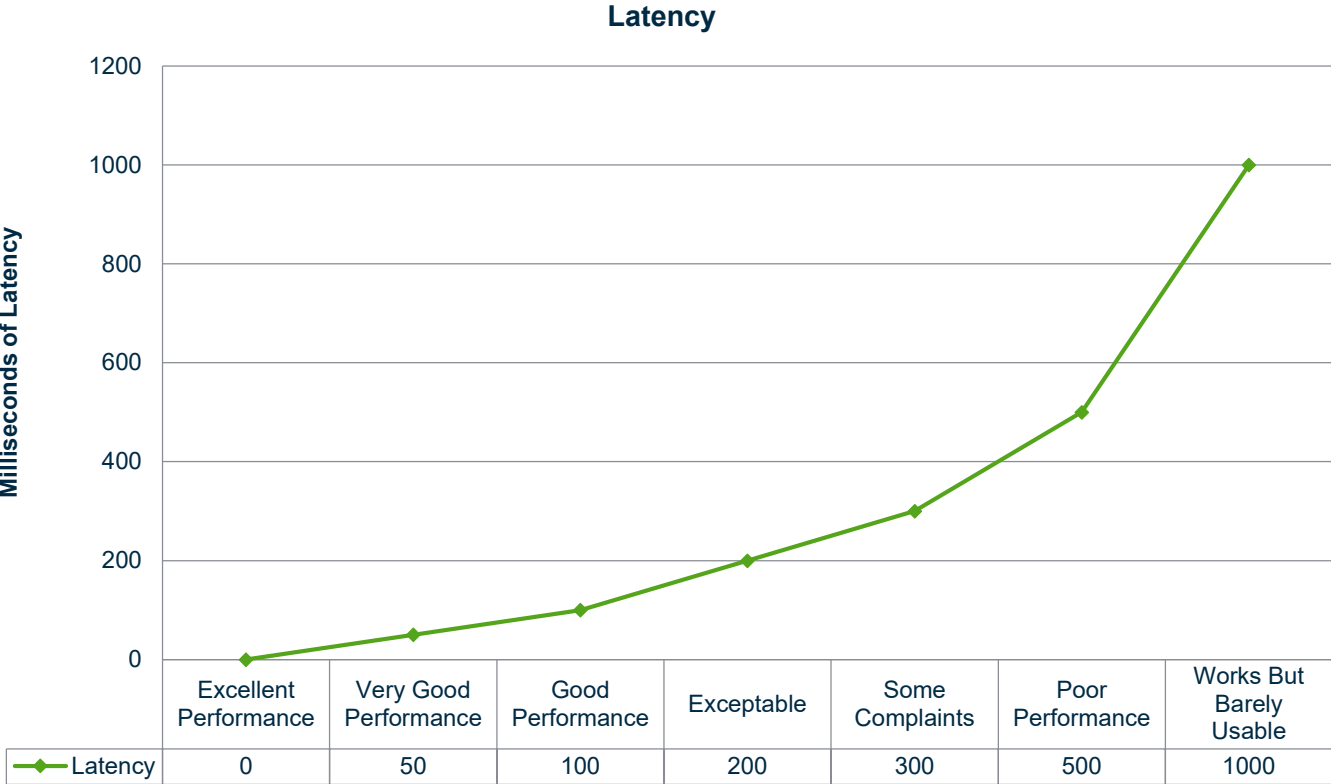
Closest Datacenters

|                               |       |
|-------------------------------|-------|
| South Central US ( Texas )    | 24 ms |
| North Central US ( Illinois ) | 49 ms |
| East US 2 ( Virginia )        | 63 ms |



# Performance Testing

- Help us determine a datacenter
- AzureSpeed.com
- Office Performance Profile



# Caching Servers

- Configuration is included
- 10+ PW users in an office
- 5+ PW users in an office that work on the same projects and files
- Offices that have higher latency
- Offices with limited bandwidth
- Use of large files
- When better performance is needed

The following is a best practice for setting up caching servers for PW Explorer users who roam internally and externally when accessing a ProjectWise Design Integration server in the cloud. Here is the scenario:

Your domain is mycompany.com and you are accessing the ProjectWise Integration server myco-pw.bentley.com. myco-pw.bentley.com is a ProjectWise Integration server that is also hosting storage areas. It is either in the cloud, at another external location, or even at a mycompany.com internal location. Also, mycompany.com has three caching servers in the following subnets at three different office locations. If the storage area locations for the datasources the users are accessing are not on the Integration Server, you will need to add that server to the instructions below.

```
cachingserver01.mycompany.com is in subnet 192.168.1.*
cachingserver02.mycompany.com is in subnet 192.168.2.*
cachingserver03.mycompany.com is in subnet 192.168.3.*
```

Mycompany.com has ProjectWise users in an office without a caching server. This office has the subnet 192.168.4.\*. In addition, a number of users in all 4 locations will access myco-pw.bentley.com from outside the office at public Wi-Fi locations or from home.

The first step will be to setup a gateway server on the edge of mycompany.com's network with a public AND a private IP address. They should provide this gateway server the same FQDN from both internally and externally to their network.

Let's assume the gateway server is setup this way:

```
pwgateway.mycompany.com = 192.168.10.1 from the private side of
mycompany.com's network.
pwgateway.mycompany.com = 4.5.6.7 from the external side of mycompany.com's
network.
```

You will need to edit the dmskml.cfg file located on the ProjectWise gateway server as follows:

In the [Gateway] section, add routing instructions every ProjectWise user in offices 1,2, & 3 will require. These gateway instructions will look something like this...

```
myco-pw.bentley.com =
cachinserver01.mycompany.com[allow(192.168.1.*),deny(*.*.*)]
myco-pw.bentley.com =
cachinserver02.mycompany.com[allow(192.168.2.*),deny(*.*.*)]
myco-pw.bentley.com =
cachinserver03.mycompany.com[allow(192.168.3.*),deny(*.*.*)]
```

These gateway instructions will provide every user in the three offices containing a caching server all the information their ProjectWise Explorer requires. Users in subnet 4 will ignore these instructions as their subnet is not allowed (deny(\*.\*.\*)) and will route directly to the myco-pw.bentley.com server for receiving files. Also, users from outside the network will access the ProjectWise Design Integration server with a public IP address. They too will ignore these instructions and route directly to the myco-pw.bentley.com.

# Service Level Agreement (SLA)

- Availability Commitment
- Service Credits
- Support Targets
- Business Continuity
- Limitations
- Termination of Service



## Appendix: Service Level Agreement

The following Service Level Agreement (SLA) supplements the SELECT Agreement including Exhibit F Bentley Cloud Offerings to further define Availability and Support Commitments to enable the achievement of Subscriber's business objectives. In the event there is a conflict between this Appendix and the SELECT Agreement, this Appendix shall prevail.

### Availability Commitment

Bentley shall provide System Availability per Table 1 below.

Table 1 - Availability

| Availability Commitment | System Availability Period |
|-------------------------|----------------------------|
| 99.9%                   | 24x7                       |

Bentley shall measure performance against the Availability Commitment during a calendar month based on the following calculation:

$$\text{Availability \%} = \frac{\text{Available Minutes} - \text{Unscheduled Downtime Minutes}}{\text{Available Minutes}}$$

- Users will be given notice of Maintenance Windows which will be used to apply required patches to the IT infrastructure to ensure the continued security, availability and performance of the system. Wherever practical, Maintenance Windows will occur outside of Subscriber's core business hours.
- The Availability Commitment excludes downtime due to Scheduled Maintenance.
- Unscheduled Downtime is calculated from the minute it is clearly reported by the Subscriber to Bentley, until Bentley reports it fixed or mitigated. Bentley may subtract from the calculated downtime any time waiting for a response from the Subscriber
- Only "Critical" Incidents (Table 3 below) will be considered as Unscheduled Downtime in the above Availability calculation.
- Where Bentley provides multiple production services, identified by different Universal Resource Locators (URLs), the availability will be calculated for each URL.

# Fully Qualified Domain Name (FQDN)

- -pw.bentley.com
- ACME-pw.bentley.com
- ACME-NA-pw.bentley.com
- ACME-US-pw.bentley.com
- ACME-TX-pw.bentley.com
- ProjectWise.ACME.com

## User provisioned certificate creation and renewal process

### IT Operations

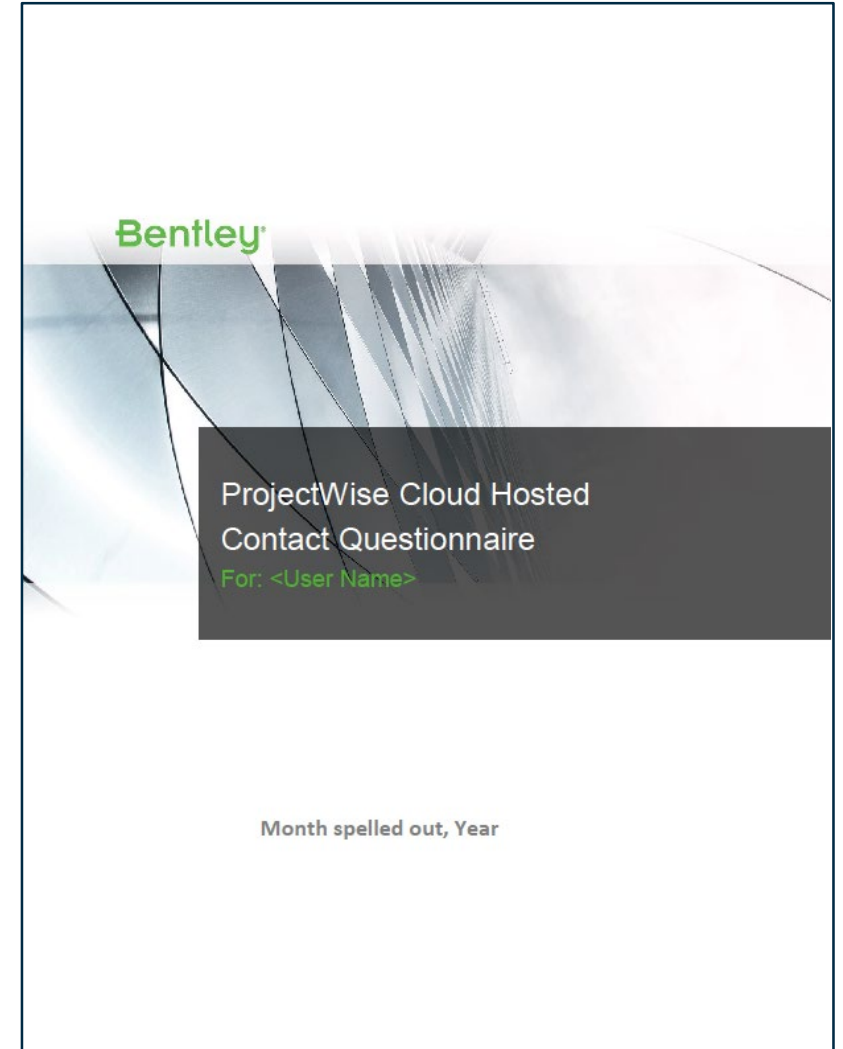
A specific process needs to be used when creating and using a custom User domain and SSL certificate.

1. MAS/AU will coordinate with the User to determine certificate common name or names
  - a. IMPORTANT: any certificate used by Bentley should have a private key that is unique to that certificate
  - b. If single website, then app.userdomain.com
  - c. If multiple websites, then - \*.userdomain.com
2. Bentley (IT Ops) will generate Certificate Signing Request (CSR)
  - a. This ensures security of the certificate's private key throughout the life of the user contract.
3. Bentley (MAS/AU) will send CSR to user
4. User to purchase the certificate according to their Certificate Authority (CA) processes
  - a. CA will request authorization from User's domain registrant
  - b. CA will produce a certificate in response to the CSR that was entered
5. User will send the certificate to Bentley (MAS/AU to forward to IT Ops)
6. Bentley (IT Ops) will process the certificate response (this essentially merges the private key with the certificate from CA)
  - a. The private key file will be secured with a strong password and stored in an encrypted password database
7. Bentley (IT Ops) will install the completed certificate on the appropriate servers with private key marked not exportable (for security).
8. Bentley (MAS) will update SSL bindings according to configuration requirements (eg, select certificate on IIS binding)
9. User will create a DNS CNAME record pointing to Bentley DNS alias. IP address should NOT be used. (eg, projectwise.userdomain.com = user-pw.bentley.com)




# Contacts

- Account Contact
- Outage Notification Contact
- Server Approval Contact
- Datasource Approval Contact




# IMS Federation



Implementing IMS Federation (SSO) with Bentley

December 14, 2017



**User Identity Provider (IdP) Information**

Please complete the following form and return to Bentley Systems, Incorporated with Bentley's Identity Management System will setup a call to discuss the next steps and answer your questions.

| Contact Information           |
|-------------------------------|
| Primary Contact Name:         |
| Primary Contact Email:        |
| Primary Contact Phone Number: |
| IT Contact Name:              |
| IT Contact Email:             |
| IT Contact Phone Number:      |

| Federation Questions  |
|---|
| Your Identity Provider (Azure AD, ADFS, etc.)   |
| Does your Identity Provider support WS-Federation protocols?  |
| Email Domain(s) you would like to Federate with Bentley (@companyname.com)  |
| Is there a specific Bentley application or service which is driving this request?   |
| Do you currently use Bentley applications or services that use Logical Accounts or Windows Authentication for user authentication (ProjectWise, eB, SiteOps, etc)                               |
| Will you require external 3rd parties to sign-in using a username which you manage? If yes, what is the format of the username? Is it a valid email domain that you manage (can receive email). |

**GET CONNECTED**

**CONNECTED Users maximize flexibility.** As a CONNECTED User, sign in to Bentley applications. Access your SELECT CONNECT information, live workflow notifications, and adaptive learning, support and community mobile and web applications. Harness the power of the cloud to understand your projects and users better investment by getting CONNECTED.

**How can your organization get CONNECTED?** How can your organization get CONNECTED account associated to your organization and web applications provide native sign-in Client.

**Step 1 - Register Users**

Administrators should register Bentley (individually or in a bulk upload) in the management portal (insert link). Be sure to add and remove users as needed as organization evolves.

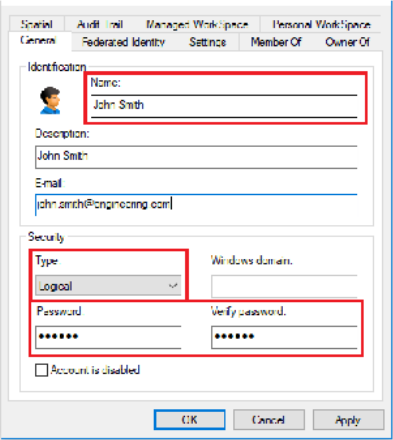
**Own Your Domain**

Account Administrators should claim ownership of their email domain and enable auto app to ensure users who register themselves properly associated with their account. This can be completed in the User Management Portal.

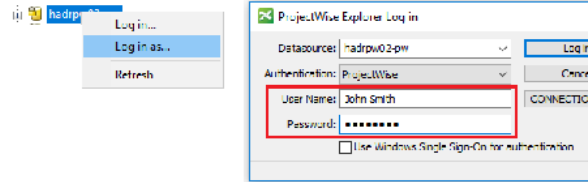
**How to create a ProjectWise User account that allows a user to login as either logical or IMS user.**

**Logical Account Type**

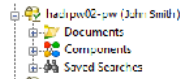
On the general tab, the Name field is used for the username, the Password field is used as it's named and the Security Type must be Logical as shown below



To confirm which account type is used when logging into ProjectWise, right click the datasource and choose **Login as...** Authentication must be ProjectWise and enter the User Name and Password and click **Login in**



When you are logged into ProjectWise, the User Name is listed after the datasource name.

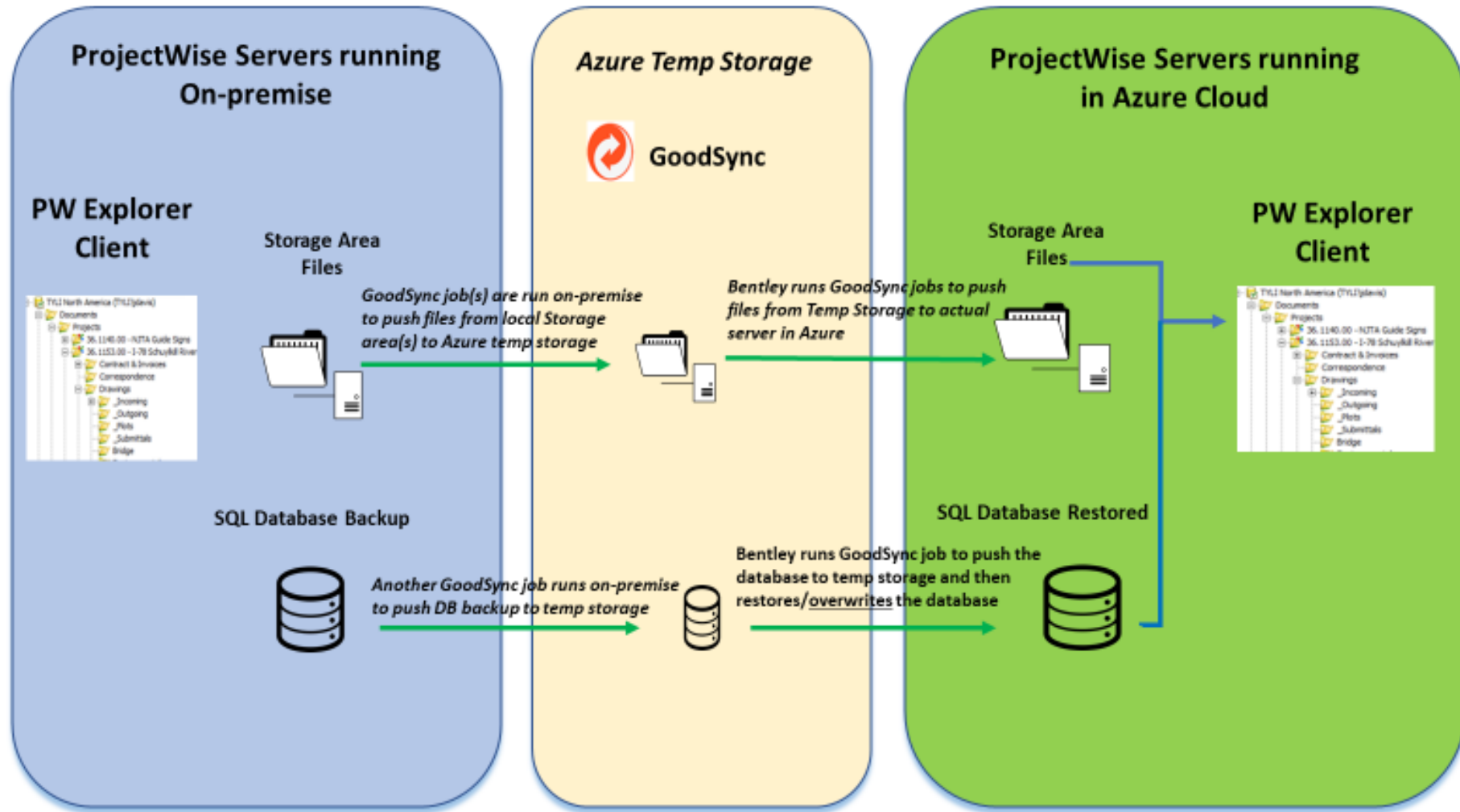


# Data Migration – Files & Database

- Transfer Client - Goodsync
  - Secure Connection
  - Direct Azure Storage Transfer
  - Schedule Jobs
  - Parallel Threads
  - Delta Transfer



# How GoodSync Works





# Go Live Migration

- 5:00pm Stop On Premise Service
  - Kick off GoodSync Delta
  - SQL or Backup
- Smaller datasources (0 to 2TB)
  - Friday Night
- Medium datasources (2TB to 10TB)
  - Saturday Noon
- Large datasources (10TB+)
  - ????
- Massive datasource Options (e.g. Storage Area)
- Oracle adds several hours to the database convert



# Best Practices: Transitioning to the Cloud

Hans Koorneef, Technical Director Project Delivery, EMEA