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|  | TITLE  Dev Design Spec - <Product Backlog Item ID, if applicable>  Authors: [Contributors] |

**Spec Phase:** [Preview, Review, Final] ([Guidance](https://microsoft.sharepoint.com/:w:/t/AzureCXPPRIMOTeam/EezqKQB4H-5Gn2wRo4bcXJ4Bcc03_j1Rz-8qABaWRHLw0g?e=hbwDNl))

*Specs should be uploaded to this* [*Sharepoint*](https://microsoft.sharepoint.com/:f:/t/AzureCXPPRIMOTeam/EtA1iXt43-BOjV0QBnwHZoQBS83KnkPnNGk7DgcLB-8Bwg?e=9CEqzB) *location to ensure they are stored centrally for discoverability. Place the spec under a folder named after your application*

# Introduction Preview

## Motivation

Describe the problem and **customer** scenarios which demonstrate the need for this feature or enhancement

## Goals

Briefly describe the goal state and capabilities you expect this feature or service to provide.

## Non-Goals

Describe any capabilities or scenario permutations which are out of scope for this design. For example if your application is never expected to support super large scale, or has assumptions about the order in which people conduct business, state that it is a non-goal to support these scenarios.

[Link to PM Spec if applicable]

# [Deliverable](http://windowsblue/docs/home/Windows%20Spec%20Wiki/Dev%20Overview.aspx) Description Preview

## [Summary](http://windowsblue/docs/home/Windows%20Spec%20Wiki/Dev%20Overview.aspx)

Overview of the key deliverables.

## [Diagram](http://windowsblue/docs/home/Windows%20Spec%20Wiki/Dev%20Overview.aspx" \o "Describe the patterns, techniques and methodologies used and why they were chosen.)

Architecture diagrams or any other diagrams visually showing the features and key scenarios or things to understand.

## [Key](http://windowsblue/docs/home/Windows%20Spec%20Wiki/Dev%20Overview.aspx) Scenarios

Outline the high level scenarios you intend to support.

## Key Components

Outline the key components, provide a description of their purpose and how they interact.

# [Design](http://windowsblue/docs/home/Windows%20Spec%20Wiki/Dev%20Overview.aspx" \o "Outlines the design at the highest level identifying design patterns, defining the scope and boundary of modules and illustrated with diagrams) Options Preview

## List of key design decisions with alternatives

For each key design decision describe the choice, the alternatives with the pros and cons of each and the rational for the chosen path.

# [Interfaces and Interactions](http://portals/wpblue/blue/wpbluewiki/Pages/Developer.aspx) Review

This section outlines any interface and contract changes or additions of importance for understanding this feature.

## [API Added/Changed](http://portals/wpblue/blue/wpbluewiki/Pages/Developer.aspx" \o "Provide a link to API spec for changes to public APIs and Protocols that are consumed by 3rd party developers )

List apis you are affecting and whether they are internal or external facing. Also provide sample request/response as needed to drive clarity for reviewers.

## [Persisted Data Format](http://portals/wpblue/blue/wpbluewiki/Pages/Developer.aspx) Changes

If you have persisted data (In a database, Queue, Storage blob, cache or index) show the contract change. Discuss any impact of the contract change including backwards compatibility considerations.

# Observability and Monitoring Review

## [Telemetry](http://windowsblue/docs/home/Windows%20Spec%20Wiki/Supportability.aspx" \o "Describe what measurements you will take and the technologies used to collect them)

What Questions do you want to be able to answer at debugging time about this feature area?

What logical structured events will be added or updated to ensure those questions are answerable?

*(Most events should include Metrics, Diagnostic Logs and Audit Logs. For example, an HTTPOperation event which records any http calls received would output metrics, logs and audit logs about the same operation but with different levels of details to each)*

## KPIs

What KPIs will be used to measure success of this feature (If any)

## [Monitors](http://windowsblue/docs/home/Windows%20Spec%20Wiki/Supportability.aspx)

What monitors (if any) will be added or updated with this feature. Discuss monitor criteria and expected action when the monitor goes off.

## [Dashboards](http://windowsblue/docs/home/Windows%20Spec%20Wiki/Supportability.aspx)

What dashboards (if any) will be added or updated with this feature. Discuss persona who will use this dashboard capability and for what purpose.

## [TSG](http://windowsblue/docs/home/Windows%20Spec%20Wiki/Supportability.aspx)

What TGS (if any) will be added or updated with this feature. Usually, the TSG will describe how to leverage the new diagnostic events to troubleshoot the new feature.

# [Functional and Unit Testing](http://portals/wpblue/blue/wpbluewiki/Pages/TestValidation.aspx) Review

## Automated Test Suites Included

What types of tests suites will be included with this feature.

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| --- | --- | --- |
| Test Type | Description | When run |
| Unit/Integration/ Performance/Functional | The purpose of the test suite | The scenario the suite is exercised |
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# [Cost and Performance](http://portals/wpblue/blue/wpbluewiki/Pages/TestValidation.aspx) Review

## Expected Cost

Outline the cost implications (if any) of the design proposed. To look up current spending see [Azure Spend](https://aka.ms/AzureSpend).

## Expected Performance characteristics

Describe the performance characteristics of the operations being added or changed.

Feature Name

Big O notation complexity

How many network calls are required?

Any sleep or sync operations?

If multiple calls are required for one feature – describe which ones are serial vs parallel

Any one-time cache hydrate operations to discuss?

## Benchmarks and targets

How will you measure the performance of this feature?

What is the target benchmark and minimum acceptable threshold

## Planning for the future.

How much do you expect the load or scale demands to grow over the next couple of years? Will this design scale into that future?

# [Scalability and Fault Tolerance](http://portals/wpblue/blue/wpbluewiki/Pages/TestValidation.aspx) Review

## Scaling Options

## Describe both vertical scaling and horizontal scaling

## Multi region redundancy

Describe the multi region story for this feature. Are there any points of failure if a single region goes down (eg: storage accounts, services bus etc).

## Architecture for scaling out including physical topologies

# [Risk](http://portals/wpblue/blue/wpbluewiki/Pages/TestValidation.aspx) Analysis and Security Review

## Identification of potential risks

List any known risks of the feature being added or updated.

## Mitigation strategies

List mitigations currently implemented against these risks.

List mitigations which will be implemented in this release cycle against these risks.

List long term solutions or mitigations planned against these risks.

# Deployment Strategy Final

## Deployment phases and environments

Where will this new capability be deployed. Will it be updated everywhere or will there be a gating process?

## Planning for the future.

## Manual vs Automated Deployment parts.

Are there any steps of the deployment process which are manual – if so, discuss why they are not automated. Common examples are App Registration configuration, Geneva account settings, Monitor configuration, One Cert registrations, AAD Group generation.

# Open Issues Final

Mark open issues in the body of this document using the Open Issue style. Also mark the header of any section which has at least one open issue and update this table.

**No table of contents entries found.**

# Timeline Final

## Briefly describe the timeline for this project including code complete and deployment in production completion estimates.

# [Cut Deliverables and Behavior](http://windowsblue/docs/home/Windows%20Spec%20Wiki/Dev%20Appendices.aspx" \o "Populate with any functionality that was later cut from the schedule) Final

Additional notes about work that was cut during design and the impact on the behavior of the feature or service.

# [Sign](http://windowsblue/docs/home/Windows%20Spec%20Wiki/Dev%20Appendices.aspx) Off Final

The goal of this section is to record who reviewed on what date. The Reviewers section contains the reviewers and the date they signed off on that level of review (Preview/Review/Final).

The Feedback section contains any feedback the reviewers gave. A reviewer may have many rows of feedback on different items. The dev team can then decide whether they accept, defer or reject the feedback.

## Reviewers

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| --- | --- | --- | --- | --- |
| Reviewer | Preview SOD | Review SOD | Final SOD | Comments |
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## Feedback

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| --- | --- | --- | --- | --- |
| Reviewer | Feedback | Date | State (Accepted, Deferred, Rejected) | Comments |
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