This explains how the **Infinity Connect system** uses **cache services** to improve performance and handle system failures. It describes **three main cache flags** that control when and how the system should use cached data instead of live processing.

Key Components in the Document

1. **Infinity Connect HA APIs**
    - These APIs allow communication between different services in the system.
    - They decide whether to send a request to **P1C Service Links** (a live system) or use **cached responses** for faster results.
2. **Three Cache Flags**
    - The document introduces three cache-related flags:
        1. **Cache Corporation Flag** (Controls cache globally)
        2. **Cache Service Status Flag** (Controls cache at the service level)
        3. **Cache Stand-In Flag** (Used when live systems are down)
3. **Admin Services**
    - These allow system administrators to check or change cache settings in real-time.

How Does It Work?

The system can either:

- Send a request **to the live P1C system** (normal processing), OR
- Retrieve the data **from cache** (faster response, useful when P1C is slow or unavailable)

The **three cache flags** decide when to use cache.

Detailed Explanation of the Three Cache Flags

1. Cache Corporation Flag

- This is the **main switch** that turns caching **ON or OFF** for the entire system.
- It is stored in the **configuration database**.
- If this flag is **enabled**, caching is possible. If **disabled**, all requests go to the P1C system.
- Example:
    - If `CACHE_ENABLED = true`, caching is allowed.

    - If `CACHE_ENABLED = false`, the system must use P1C.

Where is it stored?

- In an SQL database.
- Can be accessed using the `CacheUtil` class in the system.

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2. Cache Service Status Flag

- Controls **each individual service** (instead of the whole system like the corporation flag).
- Each API can have different cache settings.
- Stored in **XML configuration files**.

Possible values:

Value	Meaning
A (Always-on)	Always use cache.
E (Enabled)	Use cache **only** when Stand-In mode is active.
D (Disabled)	Temporarily disable cache for this service.
N (None)	This service does not support caching.

How it works:

- If a service is set to `"A"`, it **always** uses cache.
- If a service is set to `"E"`, it only uses cache **when the Stand-In flag is activated**.
- If `"D"`, the cache is **temporarily off** for that service.
- If `"N"`, the service **never** uses cache.

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3. Cache Stand-In Flag

- This flag is **only used** when a service has `"E"` (Enabled) status.
- It automatically activates when the **P1C system is down** or under maintenance.
- Helps the system keep working **even when the live backend is unavailable**.

How does it activate?

- If the system **detects a failure** in P1C, this flag is set to `TRUE`.
- The system then uses cached data instead of waiting for P1C to respond.
- Once P1C is back online, the cache stops being used.

Admin Services

- The also explains **how administrators can check or change these cache settings** using API requests.
- There are two main admin services:
    1. **ConfigCache Service** → Checks the Cache Corporation Flag.
    2. **ConfigCacheSvc Service** → Checks all Cache Service Status Flags.

Example Admin Request (SOAP XML Format):

xml
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```
<soapenv:Envelope
xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/">
   <soapenv:Body>
      <NgSystemSupervisorRqst>
         <RqstHdr>
            <SrcId>Admin</SrcId>
         </RqstHdr>
         <RqstBody>
            <MonitorLst>
               <Monitor>
                  <Name>ConfigCache</Name>
               </Monitor>
            </MonitorLst>
         </RqstBody>
      </NgSystemSupervisorRqst>
   </soapenv:Body>
</soapenv:Envelope>
```

- This **checks** the current Cache Corporation Flag setting.

How Does Everything Work Together?

1. When does the system use cache?

For a request to use the cache:

- The **Cache Corporation Flag** must be **enabled** (`true`).
- The **Cache Service Status Flag** must be:

    - `"A"` (Always-on) → Cache is always used.
    - `"E"` (Enabled) **AND** the **Cache Stand-In Flag** is **true**.

2. What happens when the P1C system is down?

- The system **automatically switches to cache** if:
    - The **Cache Stand-In Flag** is enabled.
    - The **Cache Service Status** is `"E"`.

3. What if an administrator wants to override the settings?

- They can use **Admin Services** to update the cache settings in real-time.

Conclusion

- This explains how the **Infinity Connect API system** decides whether to use **live processing or cached responses**.
- **Three cache flags** work together to control caching behavior:
    1. **Cache Corporation Flag** → Enables/disables cache globally.
    2. **Cache Service Status Flag** → Configures cache at the **service level**.
    3. **Cache Stand-In Flag** → Enables cache **only when P1C is down**.
- **Admin Services** allow system administrators to check and change these flags in real-time.