Dave, Manthan

Job Title: Dev Engineer III, Software Engineering

Department: 50587 UK TECH Software Engineering

2017 Year-end Review

Review Period: 01/01/2017 - 31/12/2017

Manager: Martin Ward (553412)

Evaluated by: Gareth Whiteside (248050)

Goals & Results

Define Secrets Management Pattern

Context: Need to define secrets management pattern to ensure consistent, secure and well scoped approach across services.

Actions

Technical Complexity and _Degree of Ambiguity_
* Dissected the problem into sections to increase clarity into what is part of and what is not part of the secrets management
* Researched principles of Securing Secrets using Safari books and talks on Youtube to better gain context and improve self knowledge on subject
* Explored exisitng available solutions (Vault/CyberArk)
* Prototyped initial solution on personal AWS account to practically test feasibility and ease of use from a Software Engineer's perspective
* Gained deeper understanding in cryptography in order to have the necessary depth when having conversation around ciphers, algorithms and their strengths
* Worked with Marshall Thompson (Snr Manager, Chamber of Secrets, US) to establish rapport and initial relationship for strategic partnership with regards to chamber of secrets

Execution
* Worked with 3rd party teams to better understand their implementation of secrets management surrounding the use of Lambdas to manage user accounts in RDS
* Worked with ISRM to leverage their expertise from their previous implementation
* Wrote initial draft proposal for lambda driven secrets management solution
* Prototyped initial solution on personal AWS account to practically test feasibility and ease of use from a Software Engineer's perspective
* Presented in ISDR, iterated over and finalised lambda solution
* Worked with Gareth Whiteside (Manager) to understand the changing landscape (increased temporal constraints) of Web Servicing which prompted going back to the drawing board to propose simpler tactical solution
* Wrote draft proposal for tactical solution, sought feedback from stakeholders, iterated, presented and approved in ISDR

Have major input into Service to Service authentication

Context: Service to service authentication pattern involved some pieces around secrets management so it was important to get involved in order to become SME in both areas

Actions

Scope of Influence
* Worked with Karthik Kannan (Snr SDE) to establish service to service authentication pattern to be in line with Secrets Management

Degree of ambiguity and _Execution_
* Iterated on drafts, arranged calls and involved key stakeholders (such as Terra Incognita) to ensure wider visibility into the pattern
* Collectively prototyped Secrets Management with Karthik Kannan (Snr SDE)
* Worked out roll out strategy for rest of web servicing. This resulted in ask for Terra to provide ability to self serve using jenkins jobs to developers initially which can then be onboarded onto change controlled platform.
* Worked with and Steered Terra Incognita (Michelle Pike (SDE III), Paul Tatham (Snr SDE)) to write initial Jenkins jobs for Tyk to self service api keys in preparation for self service encrypt api key job
* Received positive feedback within Omega Squad since self service jobs to create apis and policies made it quicker for them to request service registration
* Expanded jobs to Alpha squad to allow for more feedback and iterate. Eventually rolled out the jobs to everyone based on compounding amount of positive feedback
* Closed feedback loop with Karthik Kannan (Snr SDE) to reflect changes in his pattern
* Using in-depth knowledge of Secrets Management and Service to service authentication, worked with web teams (Craig Anderson (SDE II), Mark Stickley (Snr SDE)) to steer their way through to implementation.

Process Improvement
* Self service approach for API and policy creation for service registration on Tyk gateway is now in use across

* Socialised in SDR

Advises
* Evangelised throughout in peer circles not limited to web servicing (Terra Incognita etc)
* Worked with and encouraged Steve Lehner to build KMS Client solution.
* Worked with Chris Miller (Sr. Manager), Steve Watson (Principal TPM), Matt Sharp (TPM II), Mark Stickley (Snr SDE) to work out solution and timelines for web
* Worked with Karthik Kannan (Snr SDE) to feed back secrets management contract into his Securing Services pattern

Impact
* Secrets management pattern is now in use across services, web and Terra Incognita
* ISRM actively evangelising use of pattern in the absence of strategic solution (Chamber of Secrets)

Outcome

* (above and beyond) Pattern for secrets management agreed with ISRM as well as other stakeholders across services and web
* Involved US into the secrets management conversation

Status: Successfully Complete

Implement Secrets Management pattern in UKSVC1

Context: Being the owner of Secrets Management pattern, it was important to make sure to see the implementation through. IdS having the most critical customer identity data, it was important to get the secrets management right to avoid a potential breach.

Actions

Execution
* Worked with Steve Lehner to understand his objectives and provide back to back feedback on his implementation of secrets management pattern called KMS Client
* Wrote first IdS secrets management implementation in Java using AwsTokenService. As part of this I went beyond and configured dependency injection for rest of OpenAM stack which enabled object level optimisations in rest of IdS code base by making common sharable services singleton.
* Wrote first UKSVC1 Jenkins pipeline job to upload secrets to S3. Worked with Jack Gough (SDE II) in Alpha squad within UKSVC1 to expand this out to C1PS with ability to generate passwords in addition to existing capability.

engineering
* For Production and PCI environments, above is used internally by Terra Incognita team

Outcome

* Major input into service to service authentication pattern as well as implementation
* Self service approach for Tyk jobs increased engineering productivity as well as paving path into consuming horizontal services in future

Status: Successfully Complete

Increase involvement from Tech as community champion

* Initial conversation with Janet Dickens regarding need of someone in Tech to help increase wider community engagement
* Worked out requirements, responsibilities and scope of influence of the new role.
* Assessed personal time and based on that decided to pair up with someone junior who I can help grow into the role.
* Found someone equally enthusiastic about Tech as well as community engagement - Christina Avraam
* Worked with her to establish common understanding of the requirements surrounding the role as well as well as the scope.
* Paired into community meetings - worked with previous champions to understand problem within Tech
* Found Morale to be number 1 factor - got involved in conversations around Cheese Matters Hackathon with Dave Richards to help organise Capital One based hackathon
* Finalised hackathon organisation plan, schedule, requirements. Involved other grads and steered their ideas.

Status: In-Progress

OAuth 2 implementation

Context: Need to implement an OAuth flow to allow Authenticated user to be Authorised for Web servicing. Needs to be implemented on IdS, meet Oauth2 spec and be consumable for Client Team(s)

Actions

Tech complexity

* Designed the initial flows and requirements surrounding OAuth 2 spec from web servicing perspective
* Iterated over OAuth 2 flows for customer authorisation, token issuance (JWT/reference) and client best practices

* Wrote IdS secrets management implementation for deployment using Chef (LWRP) and Ruby
* Brought learnings such as caching of secrets to improve performance to Web which helped them improve performance

Scope of Influence
* Worked with TPMs (Steve Watson (Principal TPM), Matt Sharp (TPM II)), Chris Miller (Snr Manager) and web teams (Chris Matthews (SDE II), Mark Stickley (Snr SDE)) to better understand timelines and requirements for completing secrets management implementation for Web teams
* Pair Programmed with Craig Anderson (SDE II) and Mark Stickley (Snr SDE) to write their first implementation of secrets management

Advises
* Advised Mark Stickley (Snr SDE) on complete implementation and testing strategy for secrets management
* Advised Chris Miller (Snr Manager) Rhod Williams (Manager), Jonathan Ward (Manager) and Steve Watson (Principal TPM) regarding timelines and resource requirements regarding implementation of secrets management

Outcome

* Uniform solution across web engineering regarding Secrets Management
* Uniform solution (from pattern perspective) within Services regarding Secrets Management
* (above and beyond) Shared learnings across teams to wider organisation (Terra Incognita)

Status: Successfully Complete

Input into future of mentorship at Capital One

Context: I have had Stefan and Jamie as mentees who are wildly different in all aspects. Based on my experience as a mentor, I thought myself to be in best place to be able to feedback my learnings

Actions

Scope of influence
* Worked with Paul Jarman (Snr Manager) to create evolutionary roadmap for mentors to train mentees

Execution
* Created and iterated upon visual representation of the evolutionary roadmap for mentors to prepare for mentees
* Paul Jarman (Snr Manager) presented this in meeting of mentors along with other material with regards to the mentor programme

* Worked with web teams to design auth app by writing code for initial implementation in Node.js in order to build common vocabulary between teams
* Architected specification and use of JWT tokens for Web Servicing surrounding IdToken.

Team Work

* Worked with web teams to establish customer-service provider relationship
* Worked with stakeholders to discover requirements
* Documented flows in confluence. Iterated over documentation based on feedback from web.

Advises

* Paired/Mentored Kanagapal Subramaniam to work with OpenID Connect claim configuration to enable web teams to read UCI and IID from OAuth tokens.
* Technically advised Matt Roberts (SDE II), Rhodri Williams (Manager) and Chris Miller (Sr. Manager) to use proven passport stack with Node.js for authorisation
* Worked with Alok (Sr. Engineer) to establish common terminology around tokens being exchanged as part of authorisation flow.

Scope of Influence

* Steered web teams to use passport (passport, passport-oauth2, passport-openid, passport-jwt) as their toolchain for working out authorisation with Heimdall based on personal past experience.
* Demonstrated prototypes to Rhod Williams (Manager) and Matt Roberts (SDE II) to help them visualise the final implementation.

Outcome

* Strong well engineered solution produced for Client teams to consume from IdS
* (above and beyond) Steered production of well engineered solution by Client teams to consume IdS OAuth flow

Status: Successfully Complete

Outcome
* The evolutionary roadmap now serves as a living document which will be constantly reflected and improved upon by other mentors and buddies as part as the new mentorship programme

Status: Successfully Complete

Speak at external events, representing Capital One

* Prepared and rigorously practiced presentation skills for especially an introvert
* Presented at local meetup groups
* Presented at Women in Tech conference in Nottingham
* Presented at J on the Beach 2017 in Malaga, Spain
* Presented at SECON 2017 in Richmond, Virginia, United States
* Encouraged Jamie Tanna (SDE I) to present at conferences by imparting personal journey and experience

Status: Successfully Complete

Manager Overall Goals & Results Rating:

Manager Overall Goals & Results Comments:

Employee Overall Goals & Results Rating: Exceptional

Employee Overall Goals & Results Comments: * Worked at micro aspects regarding people behaviours within the team as well as macro aspects like engineering patterns. This allowed me to really flex my problem solving muscles.
* More focused year than before, I was more selective in tackling problems head on and delegated ones to others that I couldn't find time for.
* Consistent performance in Degree of Ambiguity, Scope of Influence and Advisement whilst boosting examples in Technical Complexity, Impact, Execution, Process Improvement and Knowledge.

Competencies

Customer Focus:	Communication:	Customer Focus: Exceptional	Communication: Exceptional
Job Specific Skills:	Influence:	Job Specific Skills: Exceptional	Influence: Exceptional
Lives the Values:	Judgment:	Lives the Values: Exceptional	Judgment: Exceptional
Results Focus:	Problem Solving:	Results Focus: Exceptional	Problem Solving: Exceptional
	Team Work:		Team Work: Exceptional

Manager Overall Competencies Rating: Very Strong

Manager Overall Competencies Comments:

Employee Overall Competencies Rating: Exceptional

Employee Overall Competencies Comments: * Worked through a lot of behavioural traits within individuals in my team to ensure a highly effective operation
* Established transparency and fluid communication across engineering teams on matters like Secrets Management, OAuth, Service to service authentication etc.
* Putting IdS live with increasingly frictionless deployments based on previously established quality rules and ideal behaviours brought the team in driving seat when it came to leading the ideal
* Mentored Jamie by having regular 10:10s as well as working with other junior members of the team (Soph) to tailor their behaviours
* Involved in mentor programme with Paul Jarman in order to ensure my vivid experience with wildly different mentees (Jamie and Stefan) are reflected upon and learnings extracted to pave the way for future mentors

Overall Summary & Look Ahead

Manager Overall Rating: Very Strong

Manager Overall Comments: <u>Strengths</u>

Design, diligence and socialisation

When picking up a design, I like the thinking and diligence that goes into it. Secrets Management is a great example. The ability to get all the details out of your head and down on a page allows easy socialisation and contribution. This is something I would like you to continue to develop and encourage in others. Socialisation and collaboration are key to our success.

What I particularly rate is the breakdown of the problem into manageable chunks. Then being able to take others through it. Your ISDR for Secrets, where you have invited additional people for socialisation and then taken the room through it was particular stand out. Also, that it wasn't new to people, due to early socialisation and collaboration. Very good behaviours indeed.

Cross team Collaboration

Another key area that I particularly value is the cross team working. When we need to bring the Web teams up to speed or help them through integration points, I could always call upon you to lead that work.

However, it's not only when I ask, more often than not you are already on it. Seeing these gaps, and more importantly,

Employee Overall Rating: Exceptional

Employee Overall Comments: Future look ahead:
* Work more on steering the technical decisions at high level
* Shape UKSVC1 team as a well oiled machine in pumping out high quality releases
* Sustain UKSVC1's reputation as leader across engineering
* Create daylight between behaviours demonstrated by UKSVC1 engineers and other teams (positively)
* Elevate SDE II and SDE IIIs across engineering by continuously raising the bar
* Be more conscious of impact my words make in discussions to have more effective conversations

dealing with them is a fantastic behaviour.

What I would like to call out further here is the way you have approached it. Having your own reference implementation, built in your own time, has been a massive benefit to aid conversation with Web teams.

Again, more to encourage here please.

Team working/Ways of Working

Within team you have been a positive influence. Your continual positive attitude is another great behaviour.

Your 1-2-1 coaching has really benefitted others, particularly Soph and Kanaga. I like the hands off, step back with a slight hand of guidance approach to Jamie. Allowing him to discover his own path. It's easy to do too much sometime when asked to mentor someone.

Support of planning, ceremonies and ways of working to help the team continually improve.

Then the continued positivity that 'we can do this guys' regardless of the size of the ask and the tightness of the timeline

All more behaviours to encourage in others, especially with the team move.

Dev ops

With such an ambitious outlook and drive to move to next level I want to provide some areas to consider when driving forwards.

Put yourself in the conversation for 'potential to promote'……

Develop Engineering Capability. What do you do to enable engineers to be better? As I call out in strengths, this has been great to see, but as also discussed, the opportunity to shift the needle is small. The new role allows you more opportunity to help people grow. You need to think about how, 1-2-1 and team. What is best for them, selflessness is critical to helping others grow. Also….

Ensure appropriate pace. You *always* go 200mph. Not everyone can do that, you need to be more mindful of others and continue to improve your patience (I say continue as this has come on a lot in 2017)

Solidify a 'ready for promote'…….

Design. I called out your designs in strengths, but I think there

is still plenty to improve here. You set the standard for SDE IIIs. Now you need to define the template and pattern for design and socialisation, which will set the standard for senior.

Refine self. We have talked for years about the enthusiasm and needing to focus. You have continued to develop and improve this. You must continue this trajectory. Go after the right things, invest time where appropriate.

On a personal note, managing someone with such high enthusiasm is actually quite draining. I want to be careful how that message lands, but I also want to be open and honest (as always). Trying to keep up with all the ideas, digest the information, help focus your direction, make decisions. And then.. ultimately… say no to most.

Dampening your enthusiasm is something I hate doing, so try hard to say no in a way that doesn't. That's no easy feat, be mindful of this for your new manager. Go after right things at right time…

Summary

An absolute stand-out SDE III and a pleasure to work with and manage. I would personally like to thank you for all the effort and support this year delivering Web servicing.

You are a very talented, energetic and enthusiastic engineer. This should be encouraged as is exactly the right kind of thing, just continue to develop the focus with it to help you grow further and achieve the next level in a timely manner.