Agile Vs Waterfall model

1. What is waterfall model?

Waterfall methodology, also known as the linear sequential lifecycle model, is defined by its linear, structured approach to project management. It is made up of a series of steps that are completed in sequential order within the software development life cycle (SDLC).

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Since its publication, variations of waterfall have emerged, but there is general consensus around the following steps within the process:

1. **Gathering of requirements:** This stage demands upfront documentation between the development team and the client or end user. During this phase, the product features within the project plan are documented in great detail, enabling the team to determine a clear cost and timeline. After both parties align on the requirements, there is limited to no correspondence between the development team and client until the project is completed.

2. **Design**: The design phase is comprised of two steps: logical design and physical design. In logical design, the team brainstorms possible ways to tackle the client problem. When the development team agrees on a solution, these ideas are translated into specific technical tasks, which are then distributed across the team to construct the physical design.

3. **Implementation:** In next phase, developers start coding based on specifications that were developed in the prior steps.

4. **Verification**: This stage tests ensures that the code functions as intended and that the requirements in the scoping document have been met. The development team checks for bugs in the code and a final validation is conducted by the client to ensure that functionality met expectations.

5. **Maintenance:** As users onboard and use the end product, there will be a need for ongoing support as new issues arise.

Key benefits of the waterfall method

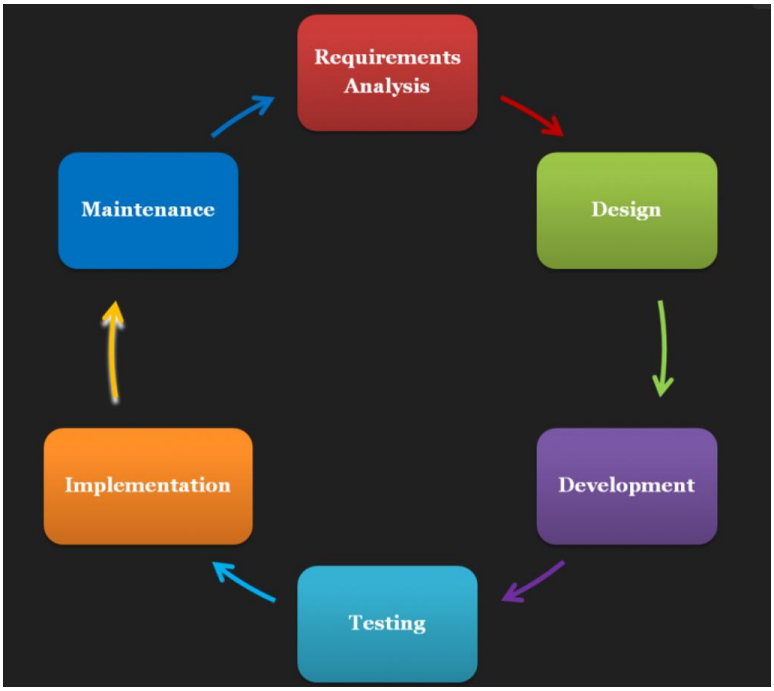
1. Detailed product requirements and documentation enable new programmers to onboard quickly and easily.
2. Documentation provides a clear scope to the project, enabling project managers to communicate budgets, timelines, and key milestones to interested parties.

Key challenges of the waterfall method

1. Clients can find it difficult to outline all of their requirements at the beginning of the project, leading to gaps in documentation.

2. Minimal customer collaboration during the development process can lead to costly changes if the product does not meet expectations.

3. Testers report issues and bugs later in the process, which could have informed an alternative program architecture.



2. What is Agile method?

In contrast to waterfall development, agile is defined by its iterative approach to project management. Instead of drafting lengthy project requirements at the onset, an agile team breaks out the product into specific features, and they tackle each one under a specific time constraint, known as a sprint.

Agile project management requires a cross-functional, self-organizing team that typically consists of five to nine members. Together, they develop a workable piece of software during each sprint, which combines with other functional code from previous iterations. By the end of the sprint timebox, the team demos their work to stakeholders for feedback, allowing them to be flexible in their approach to software development. Since the team has access to frequent feedback, they can adapt the product roadmap during the development lifecycle to ensure that functionality truly meets user expectations. In a waterfall approach, customer involvement typically coincides with the delivery of the final product, which can be costly when requirements are misinterpreted or documented incorrectly.

Agile scrum framework

Inspired by the game of rugby, agile scrum emphasizes teamwork to meet deliverables, similar to the way that forwards need to work together in a scrum to gain possession of a rugby ball. The skillset of the agile scrum team varies, but they usually include the following roles:

Inspired by the game of rugby, agile scrum emphasizes teamwork to meet deliverables, similar to the way that forwards need to work together in a scrum to gain possession of a rugby ball. The skillset of the agile scrum team varies, but they usually include the following roles:

- **Product owner:** This team member represents the needs of both the customer and the business. By crafting user stories, the team can understand how a feature request can help resolve a specific problem, and these stories formulate the backlog of tasks for the team to tackle. This person also prioritizes the stories by their value to the customer, which should, in theory, translate into value for the business. While the product owner leads the team in this way, they do not set deadlines or instruct the team on how work should be delivered.
- **Scrum master:** This team member facilitates the overall agile development process. Similar to a project manager, this person keeps the team on task, ensuring that the team remains focused during the project. They

can also act as a neutral party to mediate disagreements among team members. For example, team members may disagree on how much to take on in a given sprint. Product owners, in particular, may pressure teams to commit to more than they can deliver within a given timeframe. In these cases, scrum masters can remind team members the scope of their role on the team.

Other team members of an agile team can vary, but they typically include users from a variety of disciplines, such as design, analytics, QA, and development. These individuals collaborate together to decide on how much work to take on and how they will complete it.

Agile methodologies are also defined by the ways in which the team comes together. There are specific meetings which help facilitate the workflow across the team. Some of them include the following:

- **Sprint planning:** During this meeting, the team comes together to determine which stories will be part of the current sprint. The product owner will prioritize the user stories, but the rest of the team will need to agree on how many and which user stories they can complete during that set time period.
- **Daily standup:** These brief meetings are also known as daily scrums. During these check-ins, each team member communicates their individual progress, such as completed tasks, upcoming ones, and any blockers or dependencies which may result in delays.
- **Demo:** This meeting showcases the working software that the team completed over the course of the sprint, which can range between two- to four-week increments. The product owner will determine if a user story has met the definition of "done." If not, the product backlog may be groomed to account for anything missing. This is also an opportunity for the team to present to stakeholders for feedback.

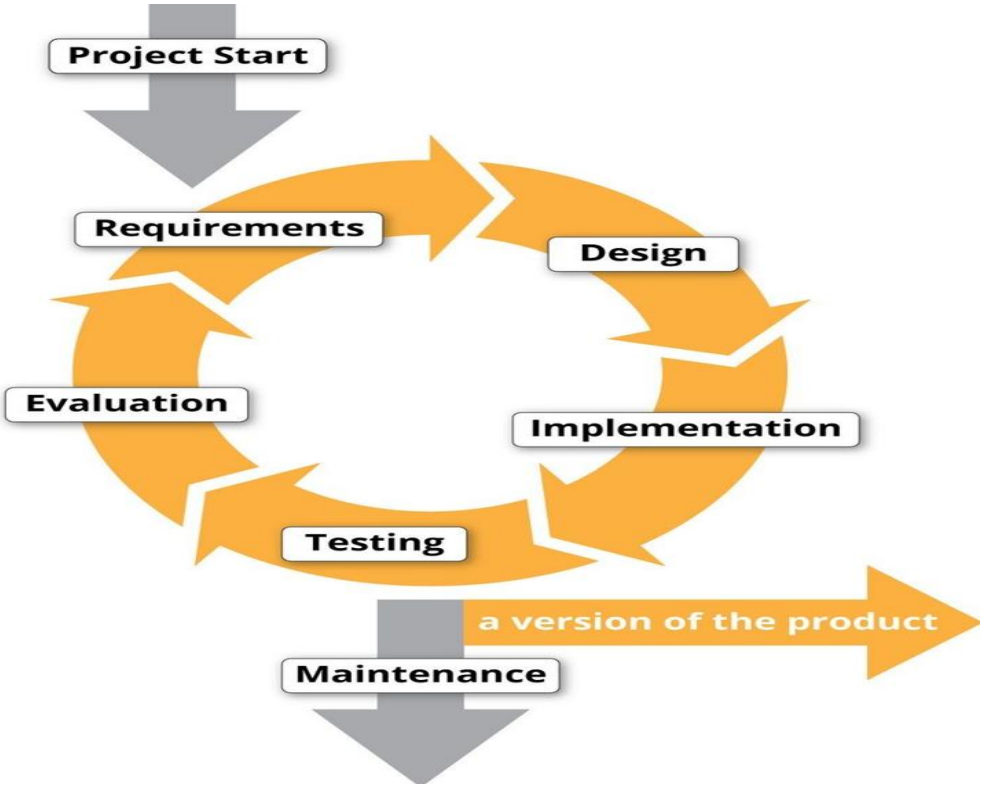
- **Retrospective:** This time is reserved for team introspection, where the team identifies how they could improve upon their workflow to achieve better results in the future.

Key benefits of the agile method-

- Team design facilitates more collaboration.
- Product development takes an adaptive design approach.
- Since code is tested with each iteration in the development phase, code defects can inform future design of the software.
- Tends to yield higher customer satisfaction since frequent feedback leads to increased prioritization of customer needs.
- Enables continuous integration as each feature is its own workable piece of software.
- This lean type of software development can lead to lower costs as there is less risk of customer and product misalignment.

Key challenges of the agile method

- An agile approach can lack comprehensive documentation. This makes it difficult to onboard new developers, project timelines to stakeholders, and provide accurate cost estimates.
- Can be difficult to scale.

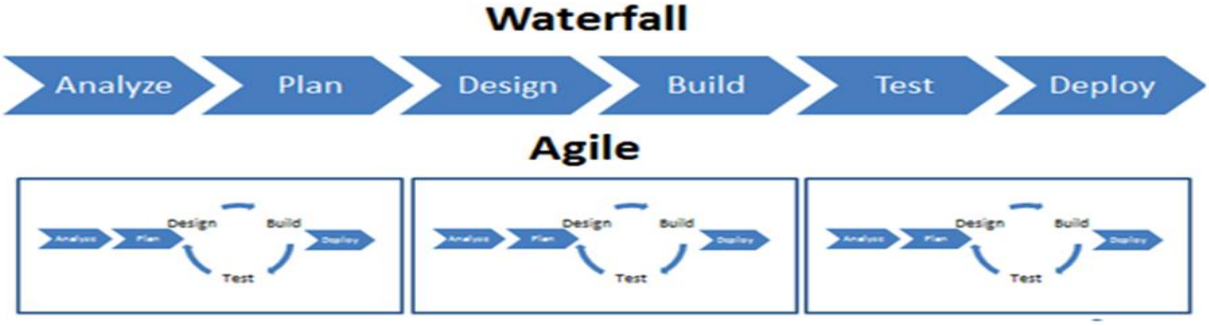


3.Difference between Agile and Waterfall Model:

Below is a difference between Agile and Waterfall methodologies:

Agile	Waterfall
It separates the project development lifecycle into sprints.	Software development process is divided into distinct phases.
It follows an incremental approach	Waterfall methodology is a sequential design process.
Agile methodology is known for its flexibility.	Waterfall is a structured software development methodology so most times it can be quite rigid.
Agile can be considered as a collection of many different projects.	Software development will be completed as one single project.
Agile is quite a flexible method which allows changes to be made in the project development requirements even if the initial planning has been completed.	There is no scope of changing the requirements once the project development starts.
Agile methodology, follow an iterative development approach because of this planning, development, prototyping and other software development phases may appear more than once.	All the project development phases like designing, development, testing, etc. are completed once in the Waterfall model.
Test plan is reviewed after each sprint	The test plan is rarely discussed during the test phase.
Agile development is a process in which the requirements are expected to change and evolve.	The method is ideal for projects which have definite requirements and changes not at all expected.

In Agile methodology, testing is performed concurrently with software development.	In this methodology, the “Testing” phase comes after the “Build” phase
Agile introduces a product mindset where the software product satisfies needs of its end customers and changes itself as per the customer’s demands.	This model shows a project mindset and places its focus completely on accomplishing the project.
Agile methdology works exceptionally well with Time & Materials or non-fixed funding. It may increase stress in fixed-price scenarios.	Reduces risk in the firm fixed price contracts by getting risk agreement at the beginning of the process.
Prefers small but dedicated teams with a high degree of coordination and synchronization.	Team coordination/synchronization is very limited.
Products owner with team prepares requirements just about every day during a project.	Business analysis prepares requirements before the beginning of the project.
Test team can take part in the requirements change without problems.	It is difficult for the test to initiate any change in requirements.
Description of project details can be altered anytime during the SDLC process.	Detail description needs to implement waterfall software development approach.
The Agile Team members are interchangeable, as a result, they work faster. There is also no need for project managers because the projects are managed by the entire team	In the waterfall method, the process is always straightforward so, project manager plays an essential role during every stage of SDLC.



4. Supporting Tools

Service Now (Snow)

Ticketing software allows organizations to resolve their internal IT issues by streamlining the resolution process. The elements they handle, called tickets, provide context about the issues, including details, categories, and any relevant tags.

What is a ticket?

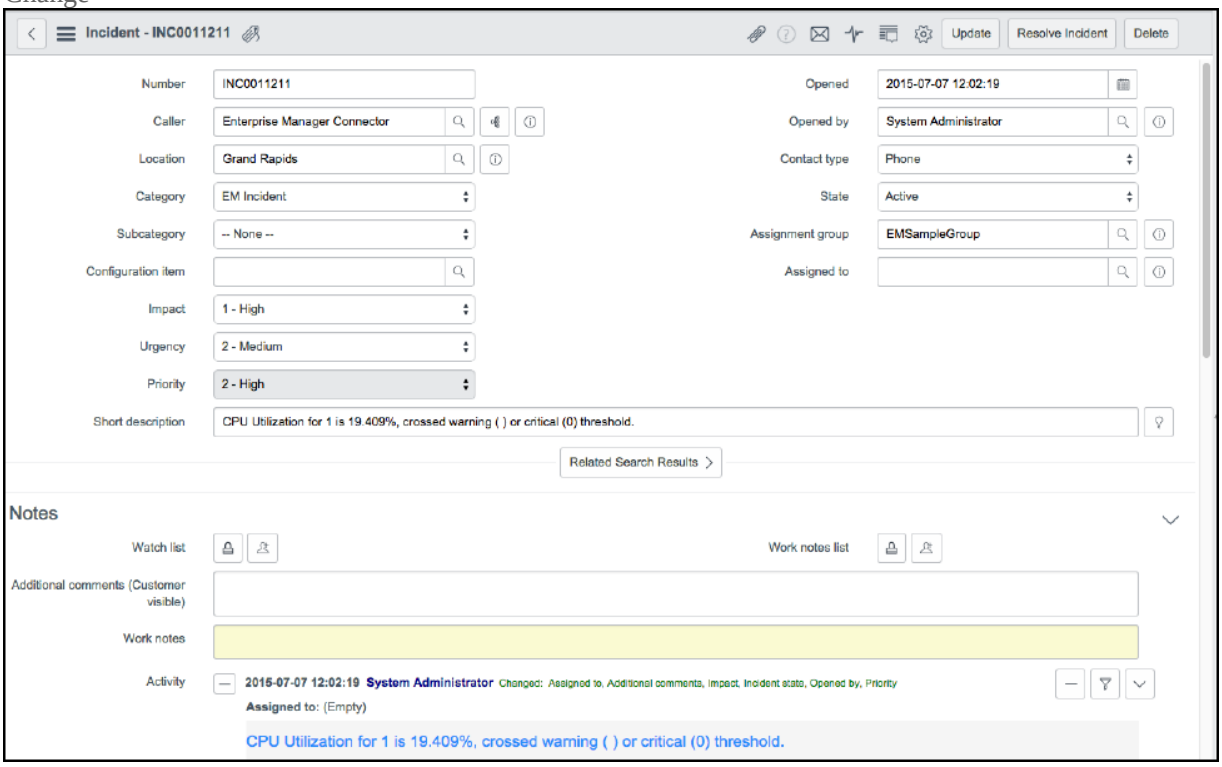
Within an employee IT ticketing system, a ticket is a special document or record that represents an incident, alert, request, or event that requires action from the IT department. It often contains additional contextual details and may also include relevant contact information of the individual who created the ticket.

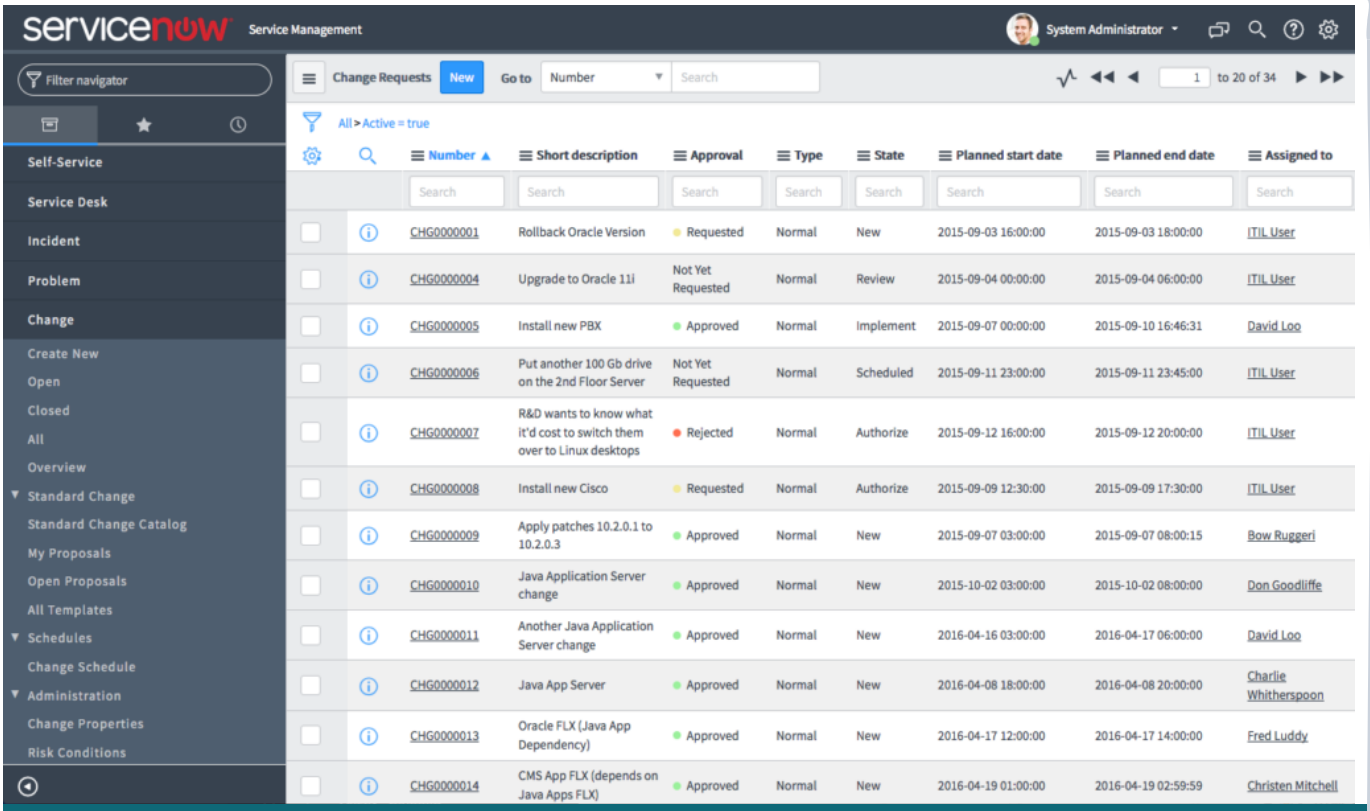
Tickets are usually employee-generated, but automated tickets may also be created when specific incidents occur and are flagged. Once a ticket is created, it is assigned to an IT agent to be resolved. Effective ticketing systems allow tickets to be submitted via a variety of methods. These include submissions through virtual agents, phone, email, service portals, live agents, walk-up experience, etc.

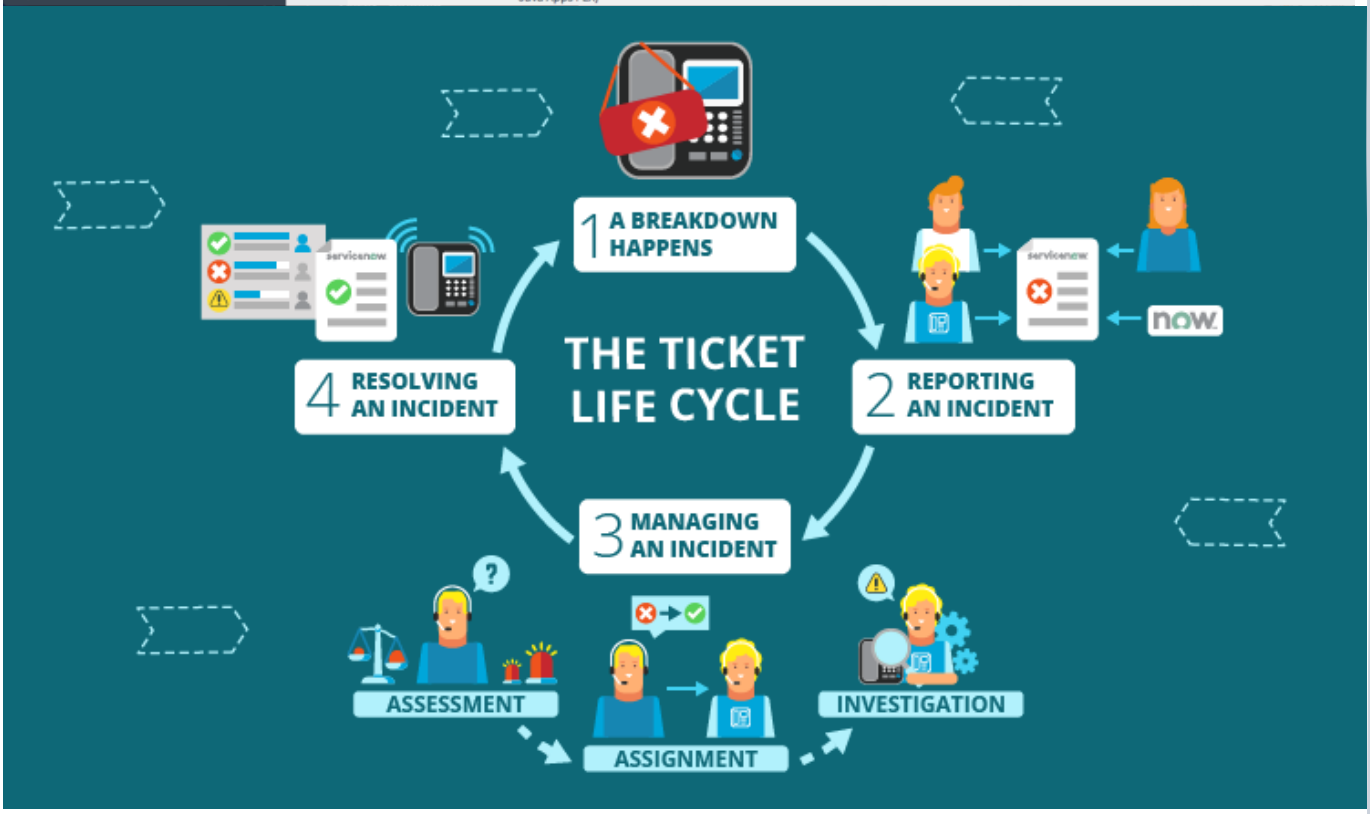
There are a number of work types used for IT Service Management. When assigned to the correct type, work gets the handling appropriate to it.

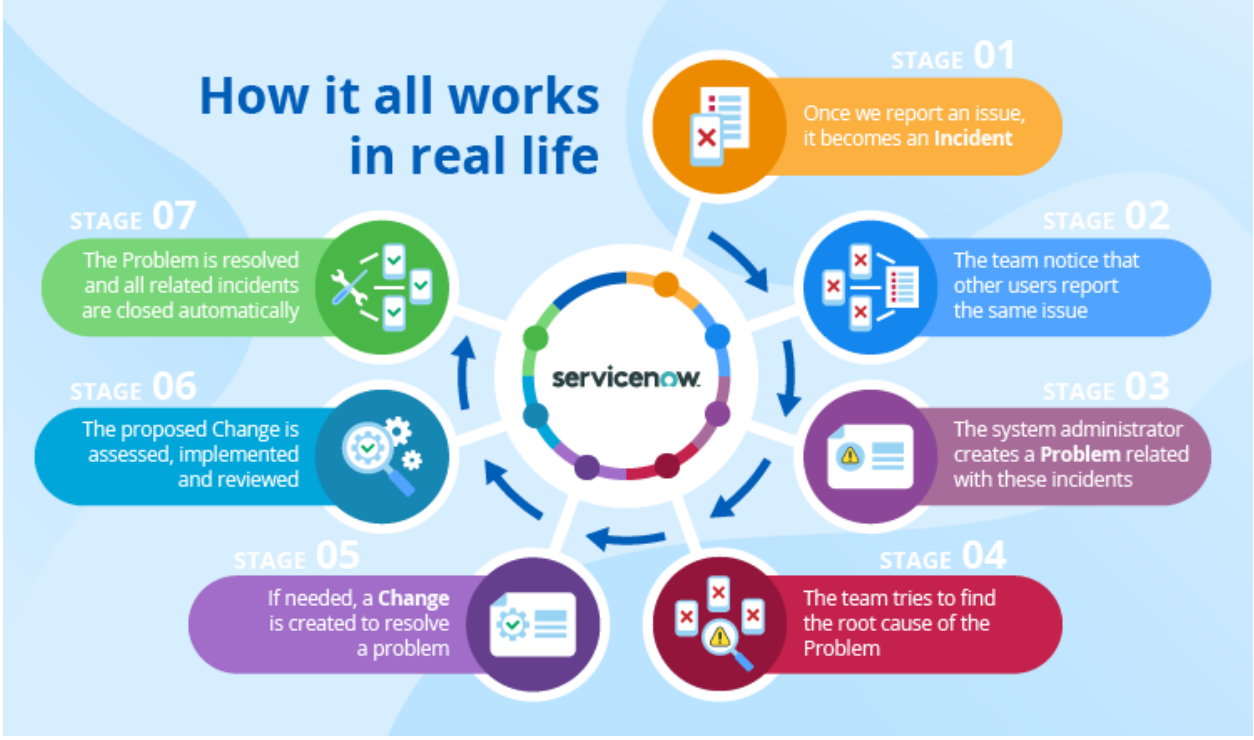
The types are:

- Service request
- Incident
- Change




servicenow
Service Management
System Administrator
Filter navigator
Change Requests
New
Go to
Number
Search
1 to 20 of 34
All > Active = true
Self-Service
Service Desk
Incident
Problem
Change
Create New
Open
Closed
All
Overview
Standard Change
Standard Change Catalog
My Proposals
Open Proposals
All Templates
Schedules
Change Schedule
Administration
Change Properties
Risk Conditions
Number
Short description
Approval
Type
State
Planned start date
Planned end date
Assigned to
CHG0000001 Rollback Oracle Version Requested Normal New 2015-09-03 16:00:00 2015-09-03 18:00:00 ITIL User
CHG0000004 Upgrade to Oracle 11i Not Yet Requested Normal Review 2015-09-04 00:00:00 2015-09-04 06:00:00 ITIL User
CHG0000005 Install new PBX Approved Normal Implement 2015-09-07 00:00:00 2015-09-10 16:46:31 David Loo
CHG0000006 Put another 100 Gb drive on the 2nd Floor Server Not Yet Requested Normal Scheduled 2015-09-11 23:00:00 2015-09-11 23:45:00 ITIL User
CHG0000007 R&D wants to know what it'd cost to switch them over to Linux desktops Rejected Normal Authorize 2015-09-12 16:00:00 2015-09-12 20:00:00 ITIL User
CHG0000008 Install new Cisco Requested Normal Authorize 2015-09-09 12:30:00 2015-09-09 17:30:00 ITIL User
CHG0000009 Apply patches 10.2.0.1 to 10.2.0.3 Approved Normal New 2015-09-07 03:00:00 2015-09-07 08:00:15 Bow Ruggeri
CHG0000010 Java Application Server change Approved Normal New 2015-10-02 03:00:00 2015-10-02 08:00:00 Don Goodliffe
CHG0000011 Another Java Application Server change Approved Normal New 2016-04-16 03:00:00 2016-04-17 06:00:00 David Loo
CHG0000012 Java App Server Approved Normal New 2016-04-08 18:00:00 2016-04-08 20:00:00 Charlie Whitherspoon
CHG0000013 Oracle FLX (Java App Dependency) Approved Normal New 2016-04-17 12:00:00 2016-04-17 14:00:00 Fred Luddy
CHG0000014 CMS App FLX (depends on Java Apps FLX) Approved Normal New 2016-04-19 01:00:00 2016-04-19 02:59:59 Christen Mitchell


1 A BREAKDOWN HAPPENS
2 REPORTING AN INCIDENT
3 MANAGING AN INCIDENT
4 RESOLVING AN INCIDENT
THE TICKET LIFE CYCLE
ASSESSMENT
ASSIGNMENT
INVESTIGATION
now



Service request

A service request is a request from a user for information, advice, or access to an IT service, such as:

- Associate asks for a access of particular server.
- A telecom coordinator requests a new desk phone on behalf of someone they support.

Incident

Let's suppose you work in an organization, and you are using outlook for connectivity, then you face issue while opening the outlook you are not able to connect to the outlook.

Then you will raise this concern to the related team (who is responsible for outlook).

Problem

The corresponding team will look into it, and try to fix it. If they don't find any root cause for the incident and if they get multiple incidents for the same underlying cause then the incident will be considered as a problem. They will give you some workaround until the root cause is determined.

- If multiple users are facing the same issue with the outlook.

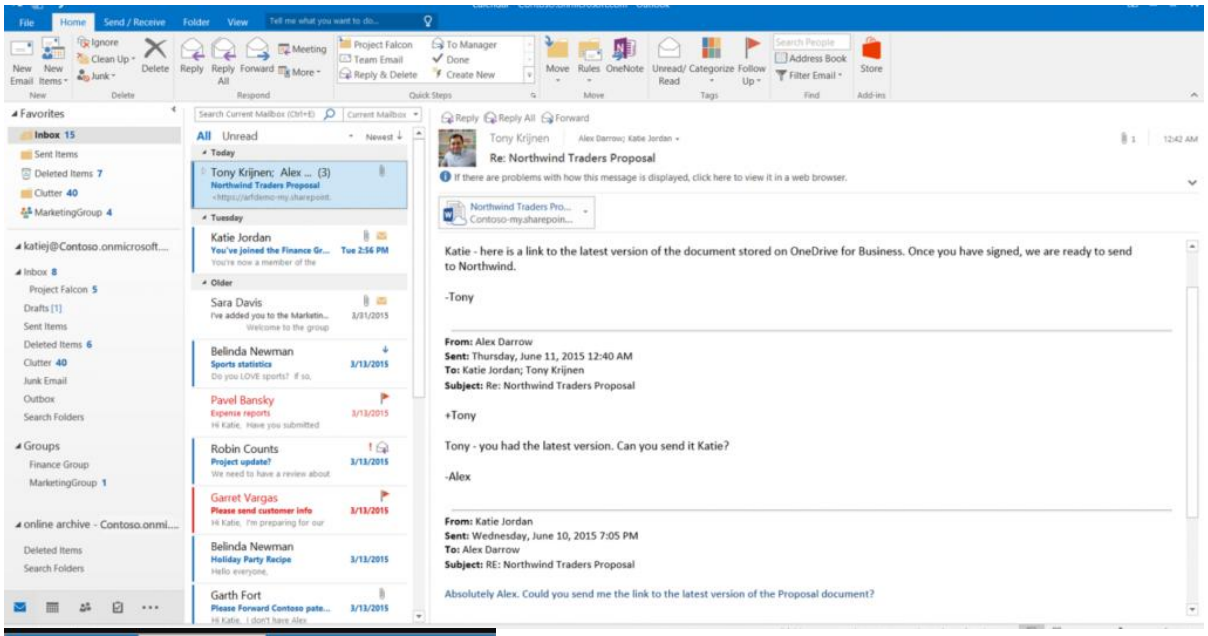
Change

If after investigation, the technical team found that the outlook server requires patching to resolve this issue. the respective team will raise the change request to apply OS patch on the server.

A change is an addition, modification, or removal of anything that could affect Production. This may include IT services, configuration items, processes, documentation, and other related elements.

Outlook:

Outlook allows you to send and receive email messages, manage your calendar, store names and numbers of your contacts, and track your tasks. However, even if you use Outlook every day, you might not know some of the cool things it can do to help you be more productive.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Home
Send / Receive
Folder
View
New Email
New Items
Ignore
Clean Up
Junk
Delete
Reply
Reply All
Forward
Meeting
More
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Reply & Delete
To Manager
Done
Create New
Move
Rules
OneNote
Unread/ Read
Categorize
Follow Up
Address Book
Filter Email
Store
Favorites
Inbox 15
Sent Items
Deleted Items 7
Clutter 40
MarketingGroup 4
katiej@Contoso.onmicrosoft....
Inbox 8
Project Falcon 5
Drafts [1]
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Deleted Items 6
Clutter 40
Junk Email
Outbox
Search Folders
Groups
Finance Group
MarketingGroup 1
online archive - Contoso.onmi....
Deleted Items
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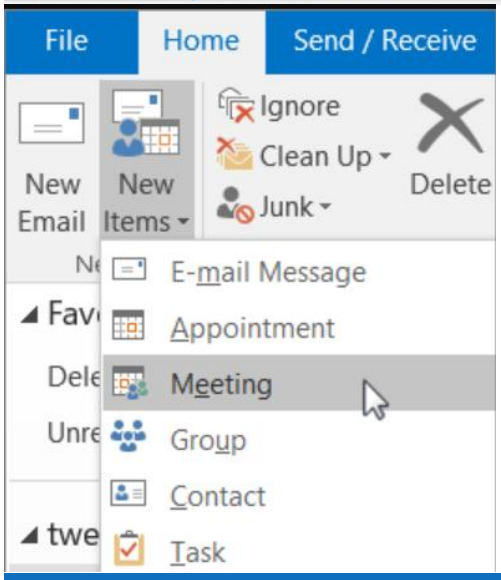
All Unread
Today
Tony Krijnen; Alex ... (3)
Northwind Traders Proposal
Tuesday
Katie Jordan
You've joined the Finance Gr...
Tue 2:56 PM
Older
Sara Davis
Belinda Newman
Sports statistics
3/13/2015
Pavel Bansky
Expense reports
Robin Counts
Project update?
Garret Vargas
Please send customer info
Belinda Newman
Holiday Party Recipe
Garth Fort
Please Forward Contoso pate...
Reply
Reply All
Forward
Tony Krijnen
Alex Darrow; Katie Jordan
12:42 AM
Re: Northwind Traders Proposal
If there are problems with how this message is displayed, click here to view it in a web browser.
Northwind Traders Pro...
Contoso-my.sharepoin...
Katie - here is a link to the latest version of the document stored on OneDrive for Business. Once you have signed, we are ready to send to Northwind.
-Tony
From: Alex Darrow
Sent: Thursday, June 11, 2015 12:40 AM
To: Katie Jordan; Tony Krijnen
Subject: Re: Northwind Traders Proposal
+Tony
Tony - you had the latest version. Can you send it Katie?
-Alex
From: Katie Jordan
Sent: Wednesday, June 10, 2015 7:05 PM
To: Alex Darrow
Subject: RE: Northwind Traders Proposal
Absolutely Alex. Could you send me the link to the latest version of the Proposal document?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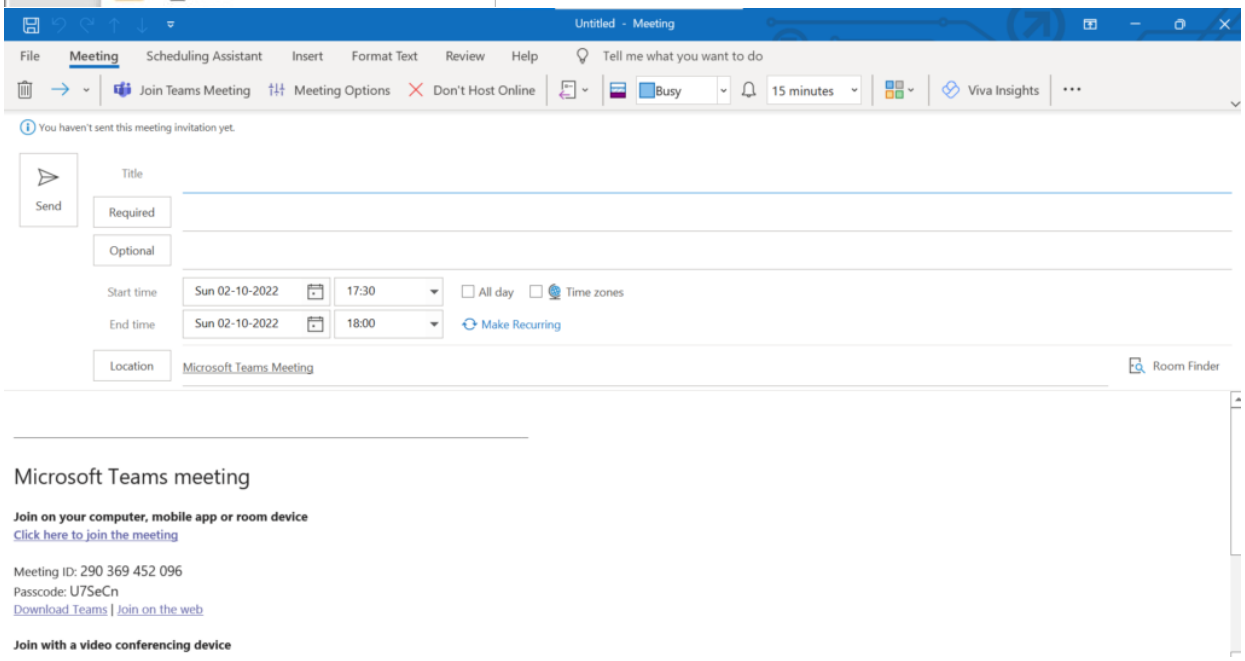
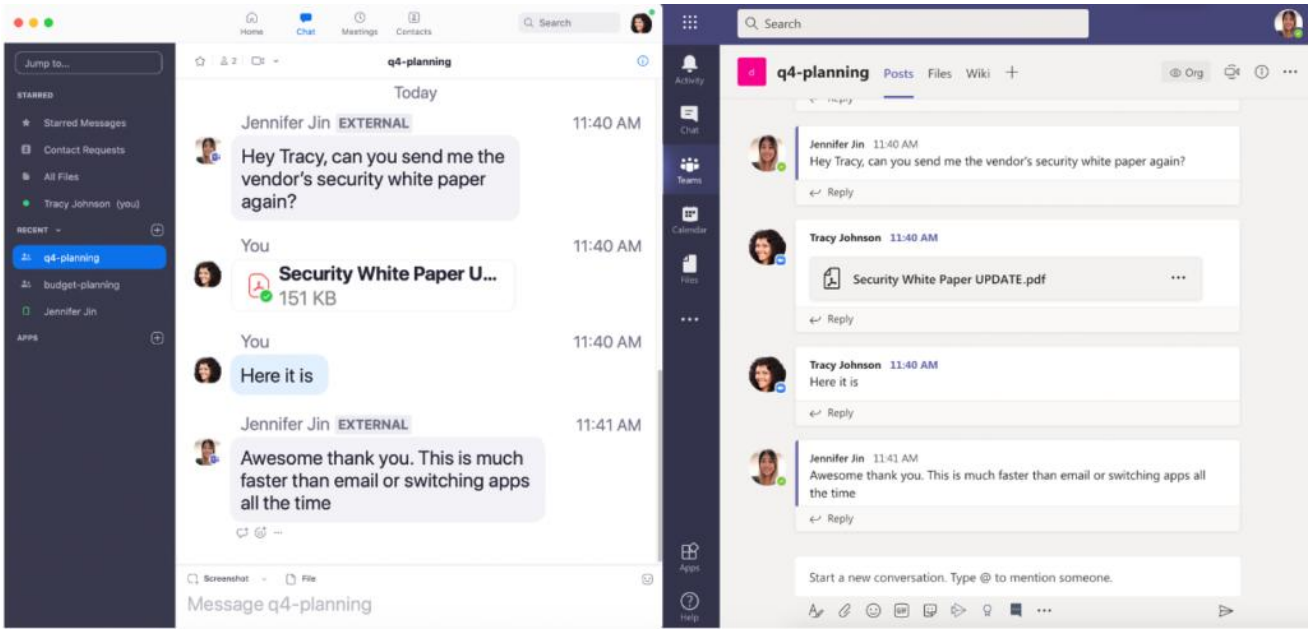
E-mail Message
Appointment
Meeting
Group
Contact
Task


Untitled - Meeting
File
Meeting
Scheduling Assistant
Insert
Format Text
Review
Help
Tell me what you want to do
Join Teams Meeting
Meeting Options
Don't Host Online
Busy
15 minutes
Viva Insights
You haven't sent this meeting invitation yet.
Send
Title
Required
Optional
Start time
Sun 02-10-2022
17:30
All day
Time zones
End time
Sun 02-10-2022
18:00
Make Recurring
Location
Microsoft Teams Meeting
Room Finder
Microsoft Teams meeting
Join on your computer, mobile app or room device
Click here to join the meeting
Meeting ID: 290 369 452 096
Passcode: U7SeCn
Download Teams | Join on the web
Join with a video conferencing device

Teams:


Home
Chat
Meetings
Contacts
Search
Jump to...
STARRED
Starred Messages
Contact Requests
All Files
Tracy Johnson (you)
RECENT
q4-planning
budget-planning
Jennifer Jin
APPS
q4-planning
Today
Jennifer Jin EXTERNAL 11:40 AM
Hey Tracy, can you send me the vendor's security white paper again?
You 11:40 AM
Security White Paper U...
151 KB
You 11:40 AM
Here it is
Jennifer Jin EXTERNAL 11:41 AM
Awesome thank you. This is much faster than email or switching apps all the time
Screenshot
File
Message q4-planning
Search
Activity
Chat
Teams
Calendar
Files
Apps
Help
q4-planning
Posts
Files
Wiki
Org
Jennifer Jin 11:40 AM
Hey Tracy, can you send me the vendor's security white paper again?
Reply
Tracy Johnson 11:40 AM
Security White Paper UPDATE.pdf
Reply
Tracy Johnson 11:40 AM
Here it is
Reply
Jennifer Jin 11:41 AM
Awesome thank you. This is much faster than email or switching apps all the time
Reply
Start a new conversation. Type @ to mention someone.