django-DefectDojo/dojo/utils.py

```
1853   def sla_compute_and_notify(*args, **kwargs):
1854       """
1855       The SLA computation and notification will be disabled if the user opts out
1856       of the Findings SLA on the System Settings page.
1857
1858       Notifications are managed the usual way, so you'd have to opt-in.
1859       Exception is for JIRA issues, which would get a comment anyways.
1860       """
1861       import dojo.jira_link.helper as jira_helper
1862
1863       def _notify(finding, title):
1864           if not finding.test.engagement.product.disable_sla_breach_notifications:
1865               create_notification(
1866                   event='sla_breach',
1867                   title=title,
1868                   finding=finding,
1869                   url=reverse('view_finding', args=(finding.id,)),
1870                   sla_age=sla_age
1871               )
1872
1873               if do_jira_sla_comment:
1874                   logger.info("Creating JIRA comment to notify of SLA breach
      information.")
1875                   jira_helper.add_simple_jira_comment(jira_instance, jira_issue,
      title)
1876
1877       # exit early on flags
1878       system_settings = System_Settings.objects.get()
1879       if not system_settings.enable_notify_sla_active and not
      system_settings.enable_notify_sla_active_verified:
1880           logger.info("Will not notify on SLA breach per user configured settings")
1881           return
1882
1883       jira_issue = None
1884       jira_instance = None
1885       try:
1886           if system_settings.enable_finding_sla:
1887               logger.info("About to process findings for SLA notifications.")
1888               logger.debug("Active {}, Verified {}, Has JIRA {}, pre-breach {},
      post-breach {}".format(
1889                   system_settings.enable_notify_sla_active,
1890                   system_settings.enable_notify_sla_active_verified,
1891                   system_settings.enable_notify_sla_jira_only,
1892                   settings.SLA_NOTIFY_PRE_BREACH,
1893                   settings.SLA_NOTIFY_POST_BREACH,
1894               ))
1895
1896               query = None
1897               if system_settings.enable_notify_sla_active_verified:
1898                   query = Q(active=True, verified=True, is_mitigated=False,
      duplicate=False)
1899               elif system_settings.enable_notify_sla_active:
1900                   query = Q(active=True, is_mitigated=False, duplicate=False)
1901               logger.debug("My query: {}".format(query))
1902
1903               no_jira_findings = {}
1904               if system_settings.enable_notify_sla_jira_only:
1905                   logger.debug("Ignoring findings that are not linked to a JIRA
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```python
                issue")
1906                        no_jira_findings = Finding.objects.exclude(jira_issue__isnull=
        False)
1907
1908                total_count = 0
1909                pre_breach_count = 0
1910                post_breach_count = 0
1911                post_breach_no_notify_count = 0
1912                jira_count = 0
1913                at_breach_count = 0
1914
1915                # Taking away for now, since the prefetch is not efficient
1916                # .select_related('jira_issue') \
1917                # .prefetch_related(Prefetch('
        test__engagement__product__jira_project_set__jira_instance')) \
1918                # A finding with 'Info' severity will not be considered for SLA
        notifications (not in model)
1919                findings = Finding.objects \
1920                    .filter(query) \
1921                    .exclude(severity='Info') \
1922                    .exclude(id__in=no_jira_findings)
1923
1924                for finding in findings:
1925                    total_count += 1
1926                    sla_age = finding.sla_days_remaining()
1927                    # if SLA is set to 0 in settings, it's a null. And setting at 0
        means no SLA apparently.
1928                    if sla_age is None:
1929                        sla_age = 0
1930
1931                    if (sla_age < 0) and (settings.SLA_NOTIFY_POST_BREACH <
        abs(sla_age)):
1932                        post_breach_no_notify_count += 1
1933                        # Skip finding notification if breached for too long
1934                        logger.debug("Finding {} breached the SLA {} days ago.
        Skipping notifications.".format(finding.id, abs(sla_age)))
1935                        continue
1936
1937                    do_jira_sla_comment = False
1938                    jira_issue = None
1939                    if finding.has_jira_issue:
1940                        jira_issue = finding.jira_issue
1941                    elif finding.has_jira_group_issue:
1942                        jira_issue = finding.finding_group.jira_issue
1943
1944                    if jira_issue:
1945                        jira_count += 1
1946                        jira_instance = jira_helper.get_jira_instance(finding)
1947                        if jira_instance is not None:
1948                            logger.debug("JIRA config for finding is {}"
        .format(jira_instance))
1949                            # global config or product config set, product level
        takes precedence
1950                            try:
1951                                # TODO: see new property from #2649 to then replace,
        somehow not working with prefetching though.
1952                                product_jira_sla_comment_enabled =
        jira_helper.get_jira_project(finding).product_jira_sla_notification
1953                            except Exception as e:
1954                                logger.error("The product is not linked to a JIRA
        configuration! Something is weird here.")
1955                                logger.error("Error is: {}".format(e))
1956
```

```python
                                    jiraconfig_sla_notification_enabled =
    jira_instance.global_jira_sla_notification

                            if jiraconfig_sla_notification_enabled or
    product_jira_sla_comment_enabled:
                                    logger.debug("Global setting {} -- Product setting {}
    ".format(
                                        jiraconfig_sla_notification_enabled,
                                        product_jira_sla_comment_enabled
                                    ))
                                    do_jira_sla_comment = True
                                    logger.debug("JIRA issue is {}"
    .format(jira_issue.jira_key))

                        logger.debug("Finding {} has {} days left to breach SLA."
    .format(finding.id, sla_age))
                        if (sla_age < 0):
                            post_breach_count += 1
                            logger.info("Finding {} has breached by {} days."
    .format(finding.id, abs(sla_age)))
                            abs_sla_age = abs(sla_age)
                            if not system_settings.enable_notify_sla_exponential_backoff
    or abs_sla_age == 1 or (abs_sla_age & (abs_sla_age - 1) == 0):
                                period = "day"
                                if abs_sla_age > 1:
                                    period = "days"
                                _notify(finding, 'Finding {} - SLA breached by {} {}!
    Overdue notice'.format(finding.id, abs_sla_age, period))
                            else:
                                logger.info("Skipping notification as exponential backoff
    is enabled and the SLA is not a power of two")
                        # The finding is within the pre-breach period
                        elif (sla_age > 0) and (sla_age <=
    settings.SLA_NOTIFY_PRE_BREACH):
                            pre_breach_count += 1
                            logger.info("Security SLA pre-breach warning for finding ID
    {}. Days remaining: {}".format(finding.id, sla_age))
                            _notify(finding, 'Finding {} - SLA pre-breach warning - {}
    day(s) left'.format(finding.id, sla_age))
                        # The finding breaches the SLA today
                        elif (sla_age == 0):
                            at_breach_count += 1
                            logger.info("Security SLA breach warning. Finding ID {}
    breaching today ({})".format(finding.id, sla_age))
                            _notify(finding, "Finding {} - SLA is breaching today"
    .format(finding.id))

                    logger.info("SLA run results: Pre-breach: {}, at-breach: {}, post-
    breach: {}, post-breach-no-notify: {}, with-jira: {}, TOTAL: {}".format(
                        pre_breach_count,
                        at_breach_count,
                        post_breach_count,
                        post_breach_no_notify_count,
                        jira_count,
                        total_count
                    ))

        except System_Settings.DoesNotExist:
            logger.info("Findings SLA is not enabled.")
```