

Statement of Confidentiality

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AppointmentMicroservice – Technical Specification based on Microservice Event Sourcing Architecture

Value Objects or Data Transfer Objects Specification

ProviderScheduleVO

ResourceScheduleId
ResourceScheduleStartDate
ResourceScheduleEndDate
ResourceScheduleStartTime
ResourceScheduleEndTime
Array of NonWorkingDates //Schedule creation will exclude non working days and leaves
ResourceType(default='CareProvider')
UniqueIndividualHealthCareProviderNumber
UniqueFacilityIdentificationNumber
Set(Collection) of AppointmentSessionSlotsVO Objects

AppointmentSessionSlotsVO

AppointmentSessionSlotsId
AppointmentSessionStartDate
AppointmentSessionStartTime
AppointmentSessionEndTime
AppointmentScheduleDate
AppointmentBookingStatusCode
AppointmentSessionAvailabilityStatusCode
AppointmentProviderAvailabilityStatusCode
ProviderScheduleVO for referential integrity

AppointmentVO

AppointmentId
AppointmentReferenceNumber
UniqueHealthIdentificationNumber
PatientName
AlternateIdentifier

AlternateIdentifierType
AppointmentBookingDate
AppointmentBookingTime
AppointmentBookingStatusCode
AppointmentSessionSlotsVO
ReasonForVisit
PatientMobileNumber
PatientLandLineNumber (either Patient LandLine or Mobile Number can be provided)
Patient Email Address/URL
AppointmentChannel
Patient

AppointmentRequestVO

AppointmentRequestId
AppointmentRequestReferenceNumber
UniqueHealthIdentificationNumber
PatientName
AlternateIdentifier
AlternateIdentifierType
AppointmentRequestedDate
AppointmentRequestedTime
AppointmentBookingStatusCode
ReasonForVisit
PatientMobileNumber
PatientLandLineNumber (either Patient LandLine or Mobile Number can be provided)
Patient Email Address/URL
AppointmentChannel

REST API (API Endpoints) Specification

[GetAllProvidersSchedulesForAFacilityLocation](#)

Method Type– POST

Request parameter – UniqueFacilityIdentificationNumber

response – List (collection) of ProviderScheduleVO Objects

GetProviderActiveSchedule

Method Type– POST

Request parameter –UniqueIndividualHealthCareProviderNumber

Response parameter– ResourceScheduleVO

GetProviderAppointmentSessionSlotsByDateRange (Slots from Active Schedule only Note – Any CareProvider will have only one active schedule at a time)

Method Type– POST

Request parameter – AppointmentSessionStartDate

AppointmentSessionEndDate

UniqueIndividualHealthCareProviderNumber

Response –List Collection of AppointmentSessionSlotsVO Objects

GetProviderAppointmentSessionSlotsBySessionAvailabilityStatusCode

Method Type– POST

Request parameter

UniqueCareProviderIdentificationNumber

AppointmentSessionAvailabilityStatusCode

Response –List of AppointmentSessionSlotsVO Objects

GetPatientAppointmentsByProviderID

Method Type– POST

Request parameter –

UniqueCareProviderIdentificationNumber

Response –List Collection of AppointmentVO Objects

GetAppointmentsByDate

Method Type– POST

Request parameter – Date

Response –List Collection of AppointmentVO Objects

GetAppointmentsByPatientUHID

Method Type– POST

Request parameter – UniqueHealthIdentificationNumber

Response –List Collection of AppointmentVO Objects

GetAppointmentByPatientMobileNumber

Method Type– POST

Request parameter – Patient Mobile Number

Response –List Collection of AppointmentVO Objects

GetAppointmentSlotsByAppointmentSessionAvailabilityStatusCode *//Slots based on slot availability status*

Method Type– POST

Request parameter

AppointmentSessionAvailabilityStatusCode

Response –List Collection of AppointmentSessionSlotVO Objects

GetAppointmentByVisitNumber

Method Type– POST

Request parameter

EncounterNumber

Response –List Collection of AppointmentVO Objects

BookAppointment

Method Type– POST

Request parameter

AppointmentRequestVO Object

Response

HTTP Status Code 201(Created)

Output – AppointmentVO Object

Failure – Error codes (400 if input request has error or 500 if server could not process request for any reason)

CreateProviderSchedule

Method Type– POST

Request parameter

UniqueCareProviderIdentificationNumber

Response –List Collection of AppointmentVO Objects

updateDoctorSlots

Method Type– PUT

Request parameter

List Collection of AppointmentSessionSlotsVO

Response –List Collection of AppointmentSessionSlotsVOObjects

getAllTimeSlots

Method Type– PUT

Request parameter

providerPatientID

patientName

patientAge

birthOrder

parity

gravida

identityUnknownIndicator

causeOfDeathKnownIndicator

patientAddress

patientAddressType

patientLandlineNumber

patientMobileNumber

patientClass
pregnancyIndicator
durationOfPregnancy
employerName

patientEmployerId
insuredCardID
insuredPolicyID
SecondaryHealthInsurancePolicyID
SecondaryHealthInsurancePolicyIndicator
payorAssignedBeneficiaryID

response

response – HTTP Status 200(ok)

GetTimeSlotBySlotId

Method Type– POST

Request parameter

ResourceScheduleID (ID of the resource schedule generated in database)

Response –List Collection of AppointmentSessionSlotsVO Objects

GetAppointmentByPatientUniqueHealthIdentificationNumber

Method Type– POST

Request parameter

UniquePatientHealthIdentificationNumber

Response –List Collection of AppointmentVO Objects

GetAppointmentsInTimeSlotByDateRange

Method Type– POST

Request parameter

AppointmentSessionStartDate

AppointmentSessionEndDate

Unique Care Provider Identification Number

Response

Response –List Collection of AppointmentVO Objects

GetAppointmentsInDateRangeByAppointmentBookingStatusCode

Method Type– POST

Request parameter

AppointmentSessionStartDate

AppointmentSessionEndDate

AppointmentBookingStatusCode

Response

Response –List Collection of AppointmentVO Objects

GetTimeSlotsByAppointmentProviderAvailabilityStatusCode

Method Type– POST

Request parameter

AppointmentSessionStartDate
AppointmentSessionEndDate
AppointmentProviderAvailabilityStatusCode
Unique Care Provider Identification Number

Response

Response –List Collection of AppointmentSessionSlotsVO Objects

UpdateAppointmentStatus

Method Type– POST

Request parameter
AppointmentVO Object

Response – HTTP Status 200(ok)
4xx in case of error in input parameter
500 in case of server error in processing request

CancelDoctorSchedule

Method Type– POST

Request parameter
AppointmentVO Object

Response – HTTP Status 200(ok)
4xx in case of error in input parameter

GetAppointmentsByStatus

Method Type– POST

Request parameter

Appointment Booking Status Code

Response e – [List collection of AppointmentVO entity](#)

CreateTimeSlotsForProviderSchedule

Method Type– POST

Request parameter

ResourceScheduleVO

StartDate

EndDate

StartTime

EndTime

SlotSize

Response

List collection of AppointmentSessionSlotsVOobjects

MergeAppointmentTimeSlots

Method Type– POST

Request parameter

List of AppointmentSessionSlotsVO (Source)

List of AppointmentSessionSlotsVO (Target)

Response – HTTP Status 200(ok)

4xx in case of error in input parameter
500 in case of server error in processing request

CancelAppointment

Method Type– POST

Request parameter

AppointmentVO object

Response – HTTP Status 200(ok)
4xx in case of error in input parameter
500 in case of server error in processing request

RescheduleAppointment

Method Type– POST

Request parameter

AppointmentVO
NewStartDate
New StartTime
New EndTime
Unique Care Provider Identification Number

Response

Response – HTTP Status 200(ok)
4xx in case of error in input parameter
500 in case of server error in processing request

CreateRecurringAppointments

Method Type– POST

Request parameter

AppointmentVO Object,
List of AppointmentSessionSlotsVO Object

Response – HTTP Status 200(ok)
4xx in case of error in input parameter
500 in case of server error in processing request
List of AppointmentVO objects

CreateBulkAppointments

Method Type– POST

Request parameter

Multipartfile CSV file , //CSV file contains bulk appointment details – The columns in CSV file should match with AppointmentVO object

Response – HTTP Status 200(ok)
4xx in case of error in input parameter
500 in case of server error in processing request
List of AppointmentVO objects

GetTimeSlotStatusByProviderID

Method Type– POST

Request parameter

UniqueIndividual Health Care Provider Number

Response

List collection of Patient entity

GetProviderAvailableSlots

Method Type– POST

Request parameter

UniqueIndividual Health Care Provider Number

Response

List collection ofAppointmentSessionSlotsVO

SetProviderNonAvailability

Method Type– POST

Request parameter

UniqueIndividual Health Care Provider Number

AppointmentSessionStartDate

AppointmentSessionEndDate

AppointmentSessionStartTime

AppointmentSessionEndTime

Response

List collection ofAppointmentSessionSlotsVO

PurgeAppointments

Method Type– POST

Request parameter

List of AppointmentVO Objects

Response

Status – HTTP status code 200 (success)

Response

BlockResource //Block SlotsAppointmentSessionAvailabilityStatusCode changes to 'Blocked' for the selected sessions.

Method Type– POST

Request parameter

AppointmentScheduleVO

List of AppointmentSessionSlotsVO Objects

Response – HTTP Status 200(ok)

4xx in case of error in input parameter

500 in case of server error in processing request

List ofAppointmentSessionSlotsVO objects

UnBlockResource //Block Slots AppointmentSessionAvailabilityStatusCode changes to 'Ävailable' for the selected sessions.

Method Type– POST

Request parameter

AppointmentScheduleVO

List of AppointmentSessionSlotsVO Objects

Response – HTTP Status 200(ok)

4xx in case of error in input parameter

500 in case of server error in processing request

List ofAppointmentSessionSlotsVO objects

PurgeTimeSlots

Method Type– POST

Request parameter

List of AppointmentSessionSlotsVO Objects

Response

– HTTP Status 200(ok)

4xx in case of error in input parameter

500 in case of server error in processing request

GetAllAppointmentBlocksByCareProvider

Method Type– POST

Request parameter

String UniqueIndividual Health Care Provider Number

Response

Response – HTTP Status 200(ok)

4xx in case of error in input parameter

500 in case of server error in processing request

List ofAppointmentSessionSlotsVO objects

GetAppointmentBlocksByDateRangeForACareProvider

Method Type– POST

Request parameter

UniqueIndividual Health Care Provider Number

StartDate

EndDate

StartTime

EndTime

Response – HTTP Status 200(ok)
4xx in case of error in input parameter
500 in case of server error in processing request
List ofAppointmentSessionSlotsVO objects

GetAppointmentBlocksByAppointmentStatus

Unique Individual Health Care Provider Number
AppointmentBookedStatusCode

Response – HTTP Status 200(ok)
4xx in case of error in input parameter
500 in case of server error in processing request
List ofAppointmentVO objects

voidTimeSlot

Method Type– POST

Request parameter

UniqueIndividual Health Care Provider Number
StartDate
EndDate
StartTime
EndTime

Response

Response – HTTP Status 200(ok)
4xx in case of error in input parameter
500 in case of server error in processing request
List ofAppointmentSessionSlotsVO objects

unvoidTimeSlot

Method Type– POST

Request parameter

UniqueIndividual Health Care Provider Number

StartDate

EndDate

StartTime

EndTime

Response

Response – HTTP Status 200(ok)

4xx in case of error in input parameter

500 in case of server error in processing request

List ofAppointmentSessionSlotsVO objects

CheckInAppointment

Method Type– POST

Request parameter

AppointmentVO object (containing scheduled date and time and appointment reference number)

UniqueHealthIdentificationNumber //in case of walk in patient who is already registered

Unique Identifier

Alternate Identifier

Alternate Identifier Type

Response Parameter

AppointmentVO Object - Checkin process – person identifier will be updated and arrival date and time would populated and appointment status will be changed as

ÇheckedIn

AppointmentConfirmation

Method Type– POST

Request parameter

AppointmentVO object

Response Parameter

“Confirmed”, “Slot Not Available”

Commands

Appointment and Schedulingmicroservice will be capable of handling Nineteen different types of commands

1. CreateProviderScheduleCommand

parameters -

ResourceScheduleStartDate
ResourceScheduleEndDate
ResourceScheduleStartTime
ResourceScheduleEndTime
Array of NonWorkingDates //Schedule creation will exclude non working days and leaves
ResourceType(default='CareProvider')
UniqueIndividualHealthCareProviderNumber
UniqueFacilityIdentificationNumber
Set(Collection) of AppointmentSessionSlotsVO Objects

AppointmentSessionSlotsVO

AppointmentSessionStartDate
AppointmentSessionStartTime
AppointmentSessionStartTime
AppointmentSessionEndTime
AppointmentScheduleDate
AppointmentBookingStatusCode
AppointmentSessionAvailabilityStatusCode
AppointmentProviderAvailabilityStatusCode
ProviderScheduleVO for referential integrity

2. UpdateProviderScheduleByIdCommand

parameters -

ResourceScheduleId
ResourceScheduleStartDate
ResourceScheduleEndDate
ResourceScheduleStartTime
ResourceScheduleEndTime
Array of NonWorkingDates //Schedule creation will exclude non working days and leaves
ResourceType(default='CareProvider')
UniqueIndividualHealthCareProviderNumber
UniqueFacilityIdentificationNumber
Set(Collection) of AppointmentSessionSlotsVO Objects

AppointmentSessionSlotsVO

AppointmentSessionSlotsId
AppointmentSessionStartDate
AppointmentSessionStartTime
AppointmentSessionStartTime
AppointmentSessionEndTime
AppointmentScheduleDate
AppointmentBookingStatusCode
AppointmentSessionAvailabilityStatusCode
AppointmentProviderAvailabilityStatusCode
ProviderScheduleVO for referential integrity

3. CreateDoctorSlotsCommand

parameters

AppointmentSessionStartDate
AppointmentSessionStartTime
AppointmentSessionStartTime
AppointmentSessionEndTime
AppointmentScheduleDate
AppointmentBookingStatusCode
AppointmentSessionAvailabilityStatusCode
AppointmentProviderAvailabilityStatusCode

ProviderScheduleVO for referential integrity

4. UpdateDoctorSlotsByIdCommand

Parameters

AppointmentSessionSlotsId
AppointmentSessionStartDate
AppointmentSessionStartTime
AppointmentSessionStartTime
AppointmentSessionEndTime
AppointmentScheduleDate
AppointmentBookingStatusCode
AppointmentSessionAvailabilityStatusCode
AppointmentProviderAvailabilityStatusCode
ProviderScheduleVO for referential integrity

5. CreateAppointmentCommand

Parameters

AppointmentId
AppointmentReferenceNumber
UniqueHealthIdentificationNumber
PatientName
AlternateIdentifier
AlternateIdentifierType
AppointmentBookingDate
AppointmentBookingTime
AppointmentBookingStatusCode
AppointmentSessionSlotsVO
ReasonForVisit
PatientMobileNumber
PatientLandLineNumber (either Patient LandLine or Mobile Number can be provided)
Patient Email Address/URL
AppointmentChannel

6. updateAppointmentCommand (covers cancel appointment scenario)

Parameters

AppointmentId
AppointmentReferenceNumber
UniqueHealthIdentificationNumber
PatientName
AlternateIdentifier
AlternateIdentifierType
AppointmentBookingDate
AppointmentBookingTime
AppointmentBookingStatusCode
AppointmentSessionSlotsVO
ReasonForVisit
PatientMobileNumber
PatientLandLineNumber (either Patient LandLine or Mobile Number can be provided)
Patient Email Address/URL
AppointmentChannel

7. RescheduleAppointmentCommand

Combination of Cancel Existing Appointment and Creation of new Appointment

8. CheckInAppointment

Parameters

AppointmentVO object (containing scheduled date and time and appointment reference number)
AppointmentId
AppointmentReferenceNumber
UniqueHealthIdentificationNumber
PatientName
AlternateIdentifier
AlternateIdentifierType
AppointmentBookingDate
AppointmentBookingTime
AppointmentBookingStatusCode
AppointmentSessionSlotsVO
ReasonForVisit

PatientMobileNumber
PatientLandLineNumber (either Patient LandLine or Mobile Number can be provided)
Patient Email Address/URL
AppointmentChannel

Unique Identifier

9. MergeAppointmentCommand

Parameters

AppointmentReferenceNumbersourceAppointment
AppointmentReferenceNumbertargetAppointment

10. CreateBulkAppointmentCommand

Parameters

CSV file or XML file containing bulk appointment details

11. UpdateBulkAppointmentCommand

Parameters

CSV file or XML file containing bulk appointment details

Events

Patient Appointment & Scheduling Microservice will have seventeen events

1. PatientAppointmentBookedEvent

parameters -

AppointmentId
AppointmentReferenceNumber
UniqueHealthIdentificationNumber
PatientName
AlternateIdentifier
AlternateIdentifierType
AppointmentBookingDate
AppointmentBookingTime
AppointmentBookingStatusCode
AppointmentSessionSlotsVO
ReasonForVisit
PatientMobileNumber
PatientLandLineNumber (either Patient LandLine or Mobile Number can be provided)

Patient Email Address/URL

AppointmentChannel

2. PatientAppointmentUpdatedEvent

parameters -

AppointmentId

AppointmentReferenceNumber

UniqueHealthIdentificationNumber

\ PatientName

AlternateIdentifier

AlternateIdentifierType

AppointmentBookingDate

AppointmentBookingTime

AppointmentBookingStatusCode

AppointmentSessionSlotsVO

ReasonForVisit

PatientMobileNumber

PatientLandLineNumber (either Patient LandLine or Mobile Number can be provided)

Patient Email Address/URL

AppointmentChannel

3. PatientAppointmentCancelledEvent

parameters -

AppointmentId

AppointmentReferenceNumber

UniqueHealthIdentificationNumber

PatientName

AlternateIdentifier

AlternateIdentifierType

AppointmentBookingDate

AppointmentBookingTime

AppointmentBookingStatusCode

PatientMobileNumber

PatientLandLineNumber (either Patient LandLine or Mobile Number can be provided)

Patient Email Address/URL

AppointmentChannel

4. DoctorScheduleCreatedEvent

parameters -

ResourceScheduleId
ResourceScheduleStartDate
ResourceScheduleEndDate
ResourceScheduleStartTime
ResourceScheduleEndTime
Array of NonWorkingDates //Schedule creation will exclude non working days and leaves
ResourceType(default='CareProvider')
UniqueIndividualHealthCareProviderNumber
UniqueFacilityIdentificationNumber
Set(Collection) of AppointmentSessionSlotsVO Objects

AppointmentSessionSlotsVO

AppointmentSessionSlotsId
AppointmentSessionStartDate
AppointmentSessionStartTime
AppointmentSessionEndTime
AppointmentScheduleDate
AppointmentBookingStatusCode
AppointmentSessionAvailabilityStatusCode
AppointmentProviderAvailabilityStatusCode
ProviderScheduleVO for referential integrity

5. DoctorScheduledUpdatedEvent

parameters -

ResourceScheduleId
ResourceScheduleStartDate
ResourceScheduleEndDate
ResourceScheduleStartTime
ResourceScheduleEndTime
Array of NonWorkingDates //Schedule creation will exclude non working days and leaves
ResourceType(default='CareProvider')
UniqueIndividualHealthCareProviderNumber
UniqueFacilityIdentificationNumber
Set(Collection) of AppointmentSessionSlotsVO Objects

AppointmentSessionSlotsVO

AppointmentSessionSlotsId
AppointmentSessionStartDate
AppointmentSessionStartTime
AppointmentSessionStartTime
AppointmentSessionEndTime
AppointmentScheduleDate
AppointmentBookingStatusCode
AppointmentSessionAvailabilityStatusCode
AppointmentProviderAvailabilityStatusCode
ProviderScheduleVO for referential integrity

6. PatientAppointmentRescheduledEvent

parameters -

AppointmentReferenceNumber of Existing Appointment
AppointmentReferenceNumber of new rescheduled Appointment
AppointmentSessionStartDate
AppointmentSessionEndDate
AppointmentSessionStartTime
AppointmentSessionEndTime
UniqueHealthIdentificationNumber
Aadhar Number
Alternate Identifier

7. AppointmentCheckedIn

parameters -

AppointmentId
AppointmentReferenceNumber
UniqueHealthIdentificationNumber
Aadhar Number
Alternate Identifier

Queries

The Appointment & Scheduling service will be capable of handling seven different types of Queries:

getDoctorSchedule

Parameter –Unique CareProvider Identification Number

getAllAppointmentsForAProviderOnADate

Parameter - Date
Unique CareProvider Identification Number

getListOfPatientsArrivedOnADate

Parameter – Unique Health Identification Number
Date

getDoctorAvailableSlotsByDateRange

Parameter – StartDate, EndDate,UniqueCareProvider Identification Number

getDoctorNonAvailableSlotsByDateRange

Parameter – StartDate, EndDate,UniqueCareProvider Identification Number

Microservices Communication

Name of MicroserviceCalled From Appointment&Scheduling Service	Communication Mode	Parameters passed	Data Returned to Appointment Service
Registration Microservice	Synchronous (HTTP call)	PatientId	Patient Demographic Value Object